

TRAFFIC IMPACT ANALYSIS  
**SALVATION ARMY**  
**SIERRA DEL MAR DIVISIONAL CAMP**

Ramona, California  
~~January 20, 2005~~  
Revised December 22, 2009

*Prepared for:*

**The County of San Diego**

*On behalf of:*

**BRG Consulting**  
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LLG Ref. 3-99-0865

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## EXECUTIVE SUMMARY

Linscott, Law & Greenspan Engineers (LLG) has been retained to assess the traffic impacts associated with the expansion of the existing Salvation Army Sierra Del Mar Divisional Camp.

The existing Sierra Del Mar Divisional Camp proposed expansion could occur in several phases, although this traffic impact analysis considers the worst-case, buildout of the project. Currently, the camp is used year-round, with a weekly summer camp during the summer months, and retreat center for the balance of the year.

The existing Salvation Army Divisional Camp and Retreat operates year-round, with operations divided into two seasons: 1) Camp (summer), which includes youth camping for eight weeks during mid-June to mid-August; and 2) Retreat, which includes Salvation Army group retreats and private rentals for the balance of the year. The current typical summer population is approximately 165 people (115 youth campers and 50 staff). The campers stay for one week, and arrive on Monday afternoons (between 2:00 and 4:00 p.m.) in passenger vans and buses and depart on Saturday morning (between 9:00 and 10:00 a.m.). Camp staff arrives on Monday mornings and departs on Saturday afternoons, with one-half remaining for the duration of the season. The typical retreat population is approximately 90 people, including five staff members. The retreat groups arrive on Friday evenings, with half arriving during the evening and the remaining half arriving later. These groups leave on Sundays midday. Nearly all traffic occurs off-peak and on weekends. Most retreat visitors arrive by van or carpool.

Manual traffic counts were conducted during the AM and PM peak hours at the SR 67/Mussey Grade Road and SR 67/Archie Moore Road intersections during August 2009, when local schools were not in session. To account for school traffic, LLG conducted a comparison between the August 2009 counts and historical data during times when schools were in session. A review of the findings concluded that the counts varied by approximately 1% (school vs. no school). However, to be conservative, LLG applied a 5% growth factor to critical movements at these two intersections to account for school related traffic. Traffic data for the intersection of SR 67 and Dye Road was obtained from a previous report completed by LLG. These volumes were collected while schools were in session in 2008.

The following scenarios were analyzed for the key intersection and street segments within the project limits:

- Existing
- Existing + project
- Existing + project + cumulative projects

Based on the results of the intersection and segment analyses, the project is calculated to result in significant cumulative impacts at three intersections, and the two-lane highway segment SR 67 between Archie Moore Road and Mussey Grade Road. To mitigate these impacts, the project shall make an appropriate payment to the County's established Traffic Impact Fee (TIF) program.

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#### **APPENDIX**

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TRAFFIC IMPACT ANALYSIS  
SALVATION ARMY  
SIERRA DEL MAR DIVISIONAL CAMP

Ramona, California  
January 20, 2005  
Revised December 22, 2009

## 1.0 INTRODUCTION

### 1.1 Purpose of the Report

The following traffic study has been prepared to determine and evaluate the traffic impacts on the local circulation system due to the expansion of the existing Salvation Army Sierra Del Mar Divisional Camp. ~~The site is, located on the west side community of Mussey Grade Road approximately 1.5 miles south of SR 67. Direct access to Ramona in the site is via the existing unimproved road to the main facility.~~ County of San Diego. *Figure 1* shows the general vicinity of the project. ~~map, Figure 2 shows a more detailed project area map. A, and Figure 3 shows the conceptual site plan sketch has been developed as shown on Figure 3 for the project.~~

Included in this traffic analysis is are:

- Project Description;
- Existing conditions assessment;
- Project traffic generation/distribution/assignment;
- Intersection and street segment capacity analysis;
- Project Access, On-site circulation, and parking;
- Special event traffic;
- ~~Parking;~~
- ~~On-site circulation/access; and~~
- Conclusions/Recommendations.

### 1.1.2 Project Location and Description

The site is located on the west side of Mussey Grade Road approximately 1.5 miles south of State Route (SR) 67. Direct access to the site is via the existing Sierra Del Mar Divisional Camp is proposed to be expanded unimproved road from Mussey Grade Road to the main facility. Construction of the expansion may occur in several phases. However, to provide a worst-case analysis, this Traffic Impact Analysis assumes the effects of full buildout. Currently, the camp is used year-round, with a weekly summer camp during the summer months, and retreat center for the balance of the year.

#### **4.1.11.2.1 Existing Summer (On-Season)**

The current typical summer camp population is approximately 115 youth campers and 50 staff. ~~Generally,~~ The campers arrive on Monday afternoons between 2:00 and 4:00 PM in passenger vans holding 15 campers each. The campers then leave on Saturday mornings between 9:00 and 10:00 AM. Staff arrives on Mondays and departs on Saturdays, at different times than the campers. One-half of the staff ~~generally~~ remains on-site for the duration of the summer. These characteristics are expected to continue into the future.

#### **4.1.21.2.2 Existing Retreat (Off-Season)**

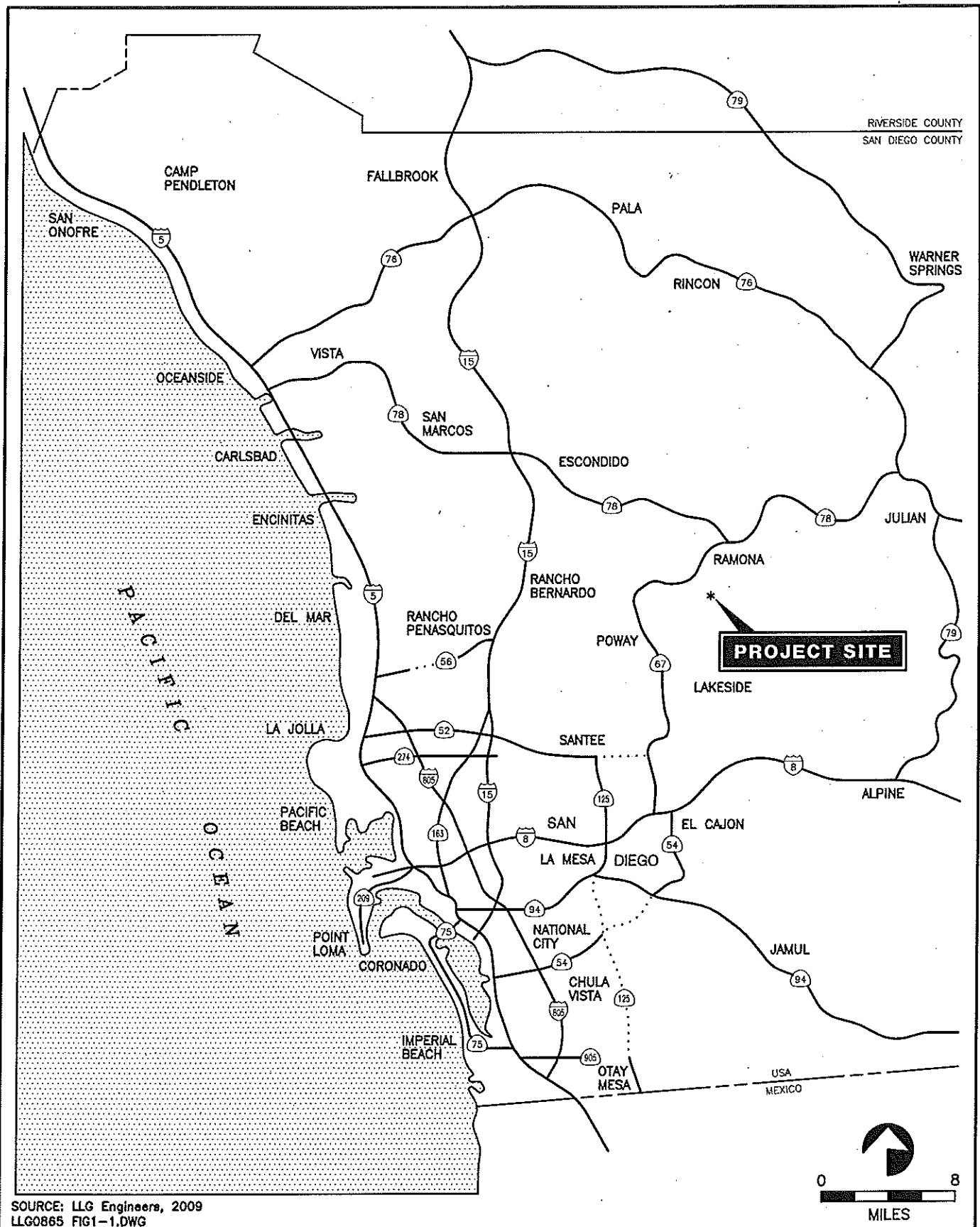
The current typical retreat population of the camp is approximately 90 people, including 5 staff members. ~~Generally,~~ Retreat groups arrive on Friday evenings, with a maximum of one-half arriving during the PM peak period (between 4 and 6 PM), and one-half arriving later. The groups ~~typically~~ leave on Sundays around midday.

#### **1.2.3 Proposed Project**

For the purpose of this analysis, a maximum future retreat capacity of 175 persons was assumed for buildout of the project. The maximum capacity of 175 people is based on the total occupancy of the proposed structures and the number of reservations allowed at the retreat center.

The average future summer camp population would be 573 guests (523 campers/50 staff), but the site could have 748 guests total when the retreat facility is rented or used for Salvation Army functions concurrently with the summer camp. These guest/staff estimates are based on the total occupancy of the proposed structures, and represent maximum occupancy. It should be noted that as of November 2009, the applicant is proposing a lower population (615 people) than analyzed in this report. Thus, the findings of this report are considered worst-case, and conservative.

~~The existing Salvation Army Divisional Camp and Retreat operates year-round, with operations generally divided into two seasons: 1) Camp (summer), which includes youth camping for eight weeks during mid-June to mid-August; and 2) Retreat, which includes Salvation Army group retreats and private rentals for the balance of the year. The current typical summer population is approximately 165 people (115 youth campers and 50 staff). The campers stay for one week, and generally arrive on Monday afternoons (between 2:00 and 4:00 p.m.) in passenger vans and buses and depart on Saturday morning (between 9:00 and 10:00 a.m.). Camp staff generally arrives on Monday MORNINGS and departs on SATURDAY AFTERNOONS, with one-half remaining for the duration of the season. The typical retreat population is approximately 90 people, including five staff members. The retreat groups generally arrive on Friday evenings, with half arriving during the evening and the remaining half arriving later. These groups leave on Sundays around midday. Most retreat visitors arrive by van or carpool. The project is unique in that its traffic generation is variable by time of the year, and occurs almost exclusively during off-peak days and hours of the week.~~



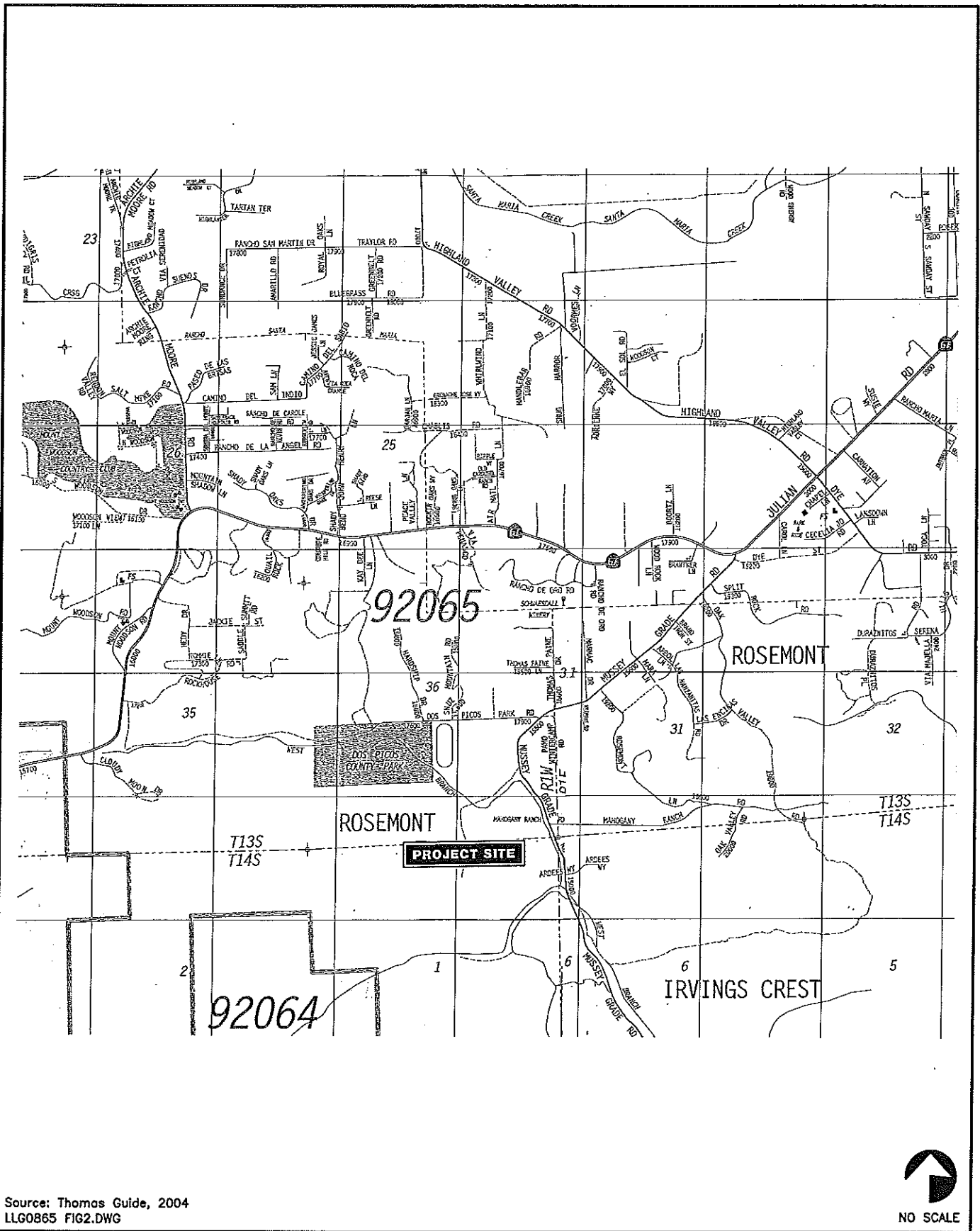
SOURCE: LLG Engineers, 2009  
LLG0865 FIG1-1.DWG

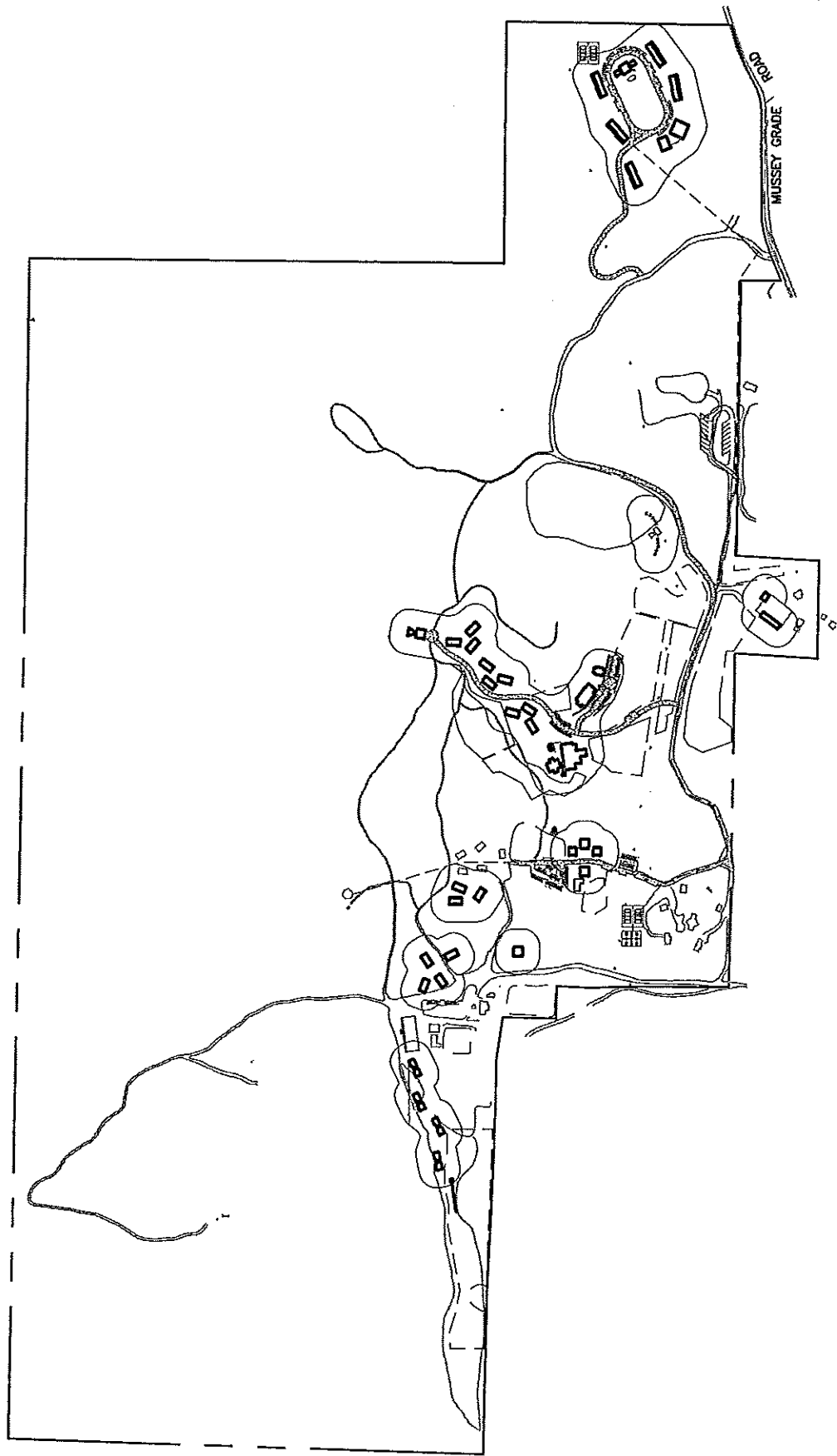
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Figure 1

VICINITY MAP

SIERRA DEL MAR





REV. 12/3/04  
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Figure 3

SITE PLAN

SIERRA DEL MAR

## 2.0 EXISTING CONDITIONS

According to the County of San Diego Public Road Standards, Prime Arterials should be 102 feet wide in 122 feet of Right-of-Way (R/W), providing six thru lanes, a raised median and curbside parking. Major Roads should be 78 feet wide in 98 feet of R/W, providing four thru lanes, a raised median and curbside parking. Collectors should be 64 feet wide in 84 feet of R/W providing four thru lanes with curbside parking or four thru lanes with a left-turn lane. Light Collectors should be 40 feet wide in 60 feet of R/W, providing two thru lanes with a left-turn lane. Bike lanes add 10 feet to both the road width and the R/W. The following is a description of the roadways in the project area. *Figure 4* shows an existing conditions diagram.

### 2.1 Existing Street Network

State Route (SR) 67 is generally a two lane undivided highway in the project area with a posted speed of 55 mph. In the project area, SR 67 is unsignalized at Mussey Grade Road, and signalized at Dye Road/Highland Valley Road.

Archie Moore Road is classified as a Rural Collector. Two lanes are currently provided. Archie Moore Road varies from 34 feet 40 feet from SR 67 to Highland Valley Road, and curb-gutter improvements are generally in place. Curbside parking is generally prohibited, and no speed limit is posted in the project area. The prevailing speeds on Archie Moore Road vary from approximately 35 mph to 50 mph, depending on conditions. The intersections and segments included in the study area are listed below. These locations were chosen based on the County's published criteria of 25 bi-directional peak hour trips. Figure 4 depicts the existing geometric conditions for the study area intersections and segments.

### Intersections

- SR 67 / Dye Road
- SR 67 / Mussey Grade Road
- SR 67 / Archie Moore Road

### Street Segments

#### Mussey Grade Road

- SR 67 to Dos Picos Park Road
- South of Dos Picos Park Road

### Two-Lane Highway Segment

#### SR 67

- Archie Moore Road to Mussey Grade Road

## 2.1 Existing Roadway Conditions

The following is a description of the nearby roadway network:

Main Street (SR 67) is classified as a Collector Road between Archie Moore Road and Dye Road on the existing County of San Diego Circulation Element, and on the County's GP Update Circulation Element. Main Street/ SR 67 is currently constructed as a two-lane undivided roadway with bike lanes provided in both directions, and curbside parking is prohibited. The posted speed limit within the project area ranges between 50 and 55 mph. SR 67 is considered as a two-lane highway in the study area.

Dye Road is currently a two-lane road and is classified as a Major Road on the current County of San Diego Circulation Element, and as a Community Collector on the GP Update Circulation Element. Dye Road is currently a two-lane undivided roadway with a posted speed limit of 50 mph. Curbside parking is prohibited. No bus stops are provided.

Mussey Grade Road is a two-lane undivided road in the project area. Mussey Grade Road is not classified on the County of San Diego Circulation Element; however, it is classified on the County's Bicycle Element to have a bike lane. Mussey Grade Road generally has 12-foot lanes with 4.5-foot



paved shoulders. The posted speed limit is 50 mph near SR 67, and curbside parking is generally not available. The shoulder width decreases further south on Mussey Grade Road. Mussey Grade Road dead-ends at the San Vicente Reservoir.

Measurements of the width of Mussey Grade Road ~~was~~were conducted at several locations from north to south as follows:

- At Brand Iron Street—32 feet
- At Mara Lane—32 feet
- At Dos Picos Road—36 feet
- North of Mahogany Ranch Road—31 feet
- South of Mahogany Ranch Road—26 feet
- North of Salvation Army Entrance—28 feet

The narrowest ~~width-observed~~ section of Mussey Grade Road is approximately 0.25 miles south of Mahogany Ranch Road and is approximately 26 feet in width with 1–3 foot shoulders. This segment is approximately 50 feet in length.

Except for a relatively short section, the existing Mussey Grade Road meets the County's Public Road Interim Standards of 28 feet of width. ~~Widening The 26-foot wide section discussed above is not recommended since there are constraints of~~ constrained by a stream/creek on the west side and an embankment on the east side and since the 2 feet of widening would be of very minimal. Existing traffic volume on this segment is low at 1,120 ADT. This is discussed in further detail in Section 5.1 (Project Access).

Archie Moore Road is currently a two-lane road and is classified as a Rural Collector on the current County of San Diego Circulation Element and as a Community Collector on the GP Update Circulation Element. Archie Moore Road is currently a two-lane undivided roadway with a posted speed limit of 50 mph. Curbside parking is prohibited. No bus stops are provided.

## 2.2 Existing Traffic Volumes

### 2.2.1 ~~Table 1 is a summary of the most recent available daily traffic counts (ADT's) from County of San Diego count records. Additional machine counts were conducted by Traffic Data Services (TDS) on Mussey Grade Road. Peak Hour Intersection Turning Movement Volumes~~

Manual traffic counts were conducted by TDS during the AM and PM peak hours at the SR 67/Mussey Grade Road and SR 67/Archie Moore Road intersections during August 2009, when local schools were not in session. To account for school traffic, LLG conducted a comparison between the August 2009 counts and historical data during times when schools were in session. A review of the findings concluded that the counts varied by approximately 1% (school vs. no school). However, to be conservative, LLG applied a 5% growth factor to critical movements at these two intersections to account for school related traffic. Traffic data for the intersection of SR 67 and Dye Road was obtained from a previous report completed by LLG. These volumes were collected while schools were in session in 2008.

Figure 5 shows the existing traffic volumes on a peak hour and daily basis.

### 2.2.2 Daily Segment Volumes

Table 2-1 is a summary of the most recent available daily traffic counts (ADT's) from County of San Diego and Caltrans count records. In addition, LLG commissioned 24-hour ADT counts along Mussey Grade Road.

Appendix A contains copies of the intersection manual count sheets and road tube count summaries.

**TABLE 1**  
**AVERAGE DAILY TRAFFIC VOLUMES**

STREET SEGMENT	DATE	VOLUME
<b>SR 67</b>		
— Mussey Grade Road to Archie Moore Road	2004	26,610 <sup>1</sup>
<b>Mussey Grade Road</b>		
— s/o SR 67	2004	3,240 <sup>2</sup>
— s/o Dos Picos Park Road	2004	1,160 <sup>2</sup>

NOTES: —s/o = south of, etc.

SOURCE: 1. Linscott, Law and Greenspan Engineers commissioned 24-hour machine counts at this location in June 2004.

2. Traffic Data Services machine counts, November 30—December 1, 2004.

**TABLE 2-1**  
**AVERAGE DAILY TRAFFIC VOLUMES**

Street Segment	ADT <sup>a</sup>	Year	Source
<b>SR 67</b>			
Archie Moore Road to Mussey Grade Road	24,500	2008	Caltrans
<b>Mussey Grade Road</b>			
SR 67 to Dos Picos Park Road	3,030	2009	LLG <sup>b</sup>
South of Dos Picos Park Road	1,120	2009	LLG <sup>b</sup>

**Footnotes:**

a. Average Daily Traffic Volumes.

b. LLG commissioned counts. A 5% growth factor was applied to account for school-related traffic.

## 2.3 Existing Operations

The following analyses of existing traffic operations were conducted using methodology described in Section 4.1.

### **2.3.1 Peak Hour Intersection Levels of Service**

Intersection capacity analyses were conducted at the study area intersections with existing traffic volumes and existing intersection lane configurations. Table 2-2 shows the results of the existing intersection analysis.

A review of Table 2-2 shows that the *signalized intersection* of SR 67/Dye Road is currently operating at LOS E during the AM peak hour, and acceptable LOS D during the PM peak hour.

Table 2-2 also shows that the minor street movements at the two *unsignalized intersections* are currently operating at LOS F for both the AM and PM peak hours with the exception of the SR 67 / Archie Moore Road intersection, which is calculated to operate at acceptable LOS C during the PM peak hour.

Appendix B contains the existing intersection analysis worksheets.

### 2.3.2 Daily Street Segment Levels of Service

Table 2-3 summarizes the existing roadway segment operations. As seen in Table 2-3, the segments along Mussey Grade Road are calculated to currently operate at acceptable LOS B or better.

### 2.3.3 Two-Lane Highway Analysis

Table 2-4 shows a summary of the existing two-lane highway operations on SR 67 between Archie Moore Road and Mussey Grade Road. This table shows that this segment is currently operating at LOS F with 24,500 existing ADT. This determination is based on the County's LOS F threshold of 22,900 ADT for a two-lane highway segment with signalized intersection spacing greater than 1 mile. The SR 67 segment east of Mussey Grade Road is not analyzed because the project's trip contribution is 10 peak hour directional trips or less (approximately 60 ADT), which could not constitute an impact based on the County's criteria, and does not warrant analysis.

**TABLE 2-2  
EXISTING INTERSECTION OPERATIONS**

Intersection	Control Type	Peak Hour	Existing	
			Delay <sup>a</sup>	LOS <sup>b</sup>
1. SR 67 / Archie Moore Road	TWSC <sup>c</sup>	AM PM	>50.1 19.5	F C
2. SR 67 / Mussey Grade Road	TWSC	AM PM	>50.1 >50.1	F F
3. SR 67 / Dye Road	Signal	AM PM	71.0 38.0	E D

**Footnotes:**

a. Average delay expressed in seconds per vehicle.

b. Level of Service.

c. TWSC – Two-Way Stop Controlled intersection. Minor street left turn delay is reported.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 < 10.0	A	0.0 < 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
> 80.1	F	> 50.1	F

**TABLE 2-3**  
**EXISTING STREET SEGMENT OPERATIONS**

<u>Street Segment</u>	<u>Classification</u>	<u>Capacity (LOS E) <sup>a</sup></u>	<u>ADT <sup>b</sup></u>	<u>LOS <sup>c</sup></u>
<u>Mussey Grade Road</u>				
<u>SR 67 to Dos Picos Park Road</u>	<u>Unclassified</u>	<u>16,200</u>	<u>3,030</u>	<u>B</u>
<u>South of Dos Picos Park Road</u>	<u>Unclassified</u>	<u>16,200</u>	<u>1,120</u>	<u>A</u>

**Footnotes:**

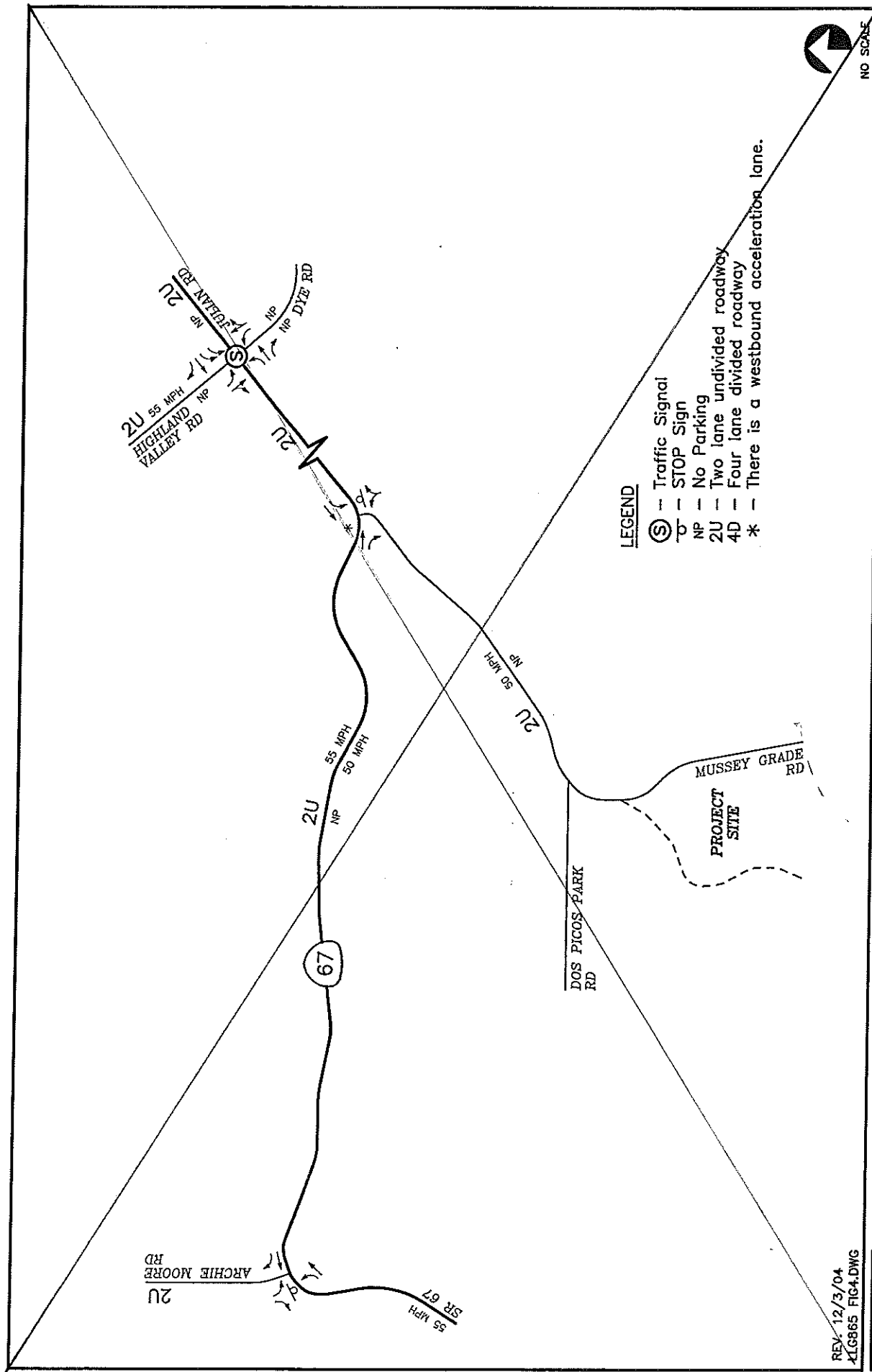
- a. Capacities based on County of San Diego Roadway Classification Table.
- b. Average Daily Traffic Volumes.
- c. Level of Service

**TABLE 2-4**  
**COUNTY OF SAN DIEGO – TWO-LANE HIGHWAY ANALYSIS**

<u>Two-Lane Highway Segment – SR 67</u>	<u>Existing</u>	
	<u>Volume</u>	<u>LOS <sup>a</sup></u>
<u>Archie Moore Road to Mussey Grade Road</u>	<u>24,500</u>	<u>F</u>

**Footnotes:**

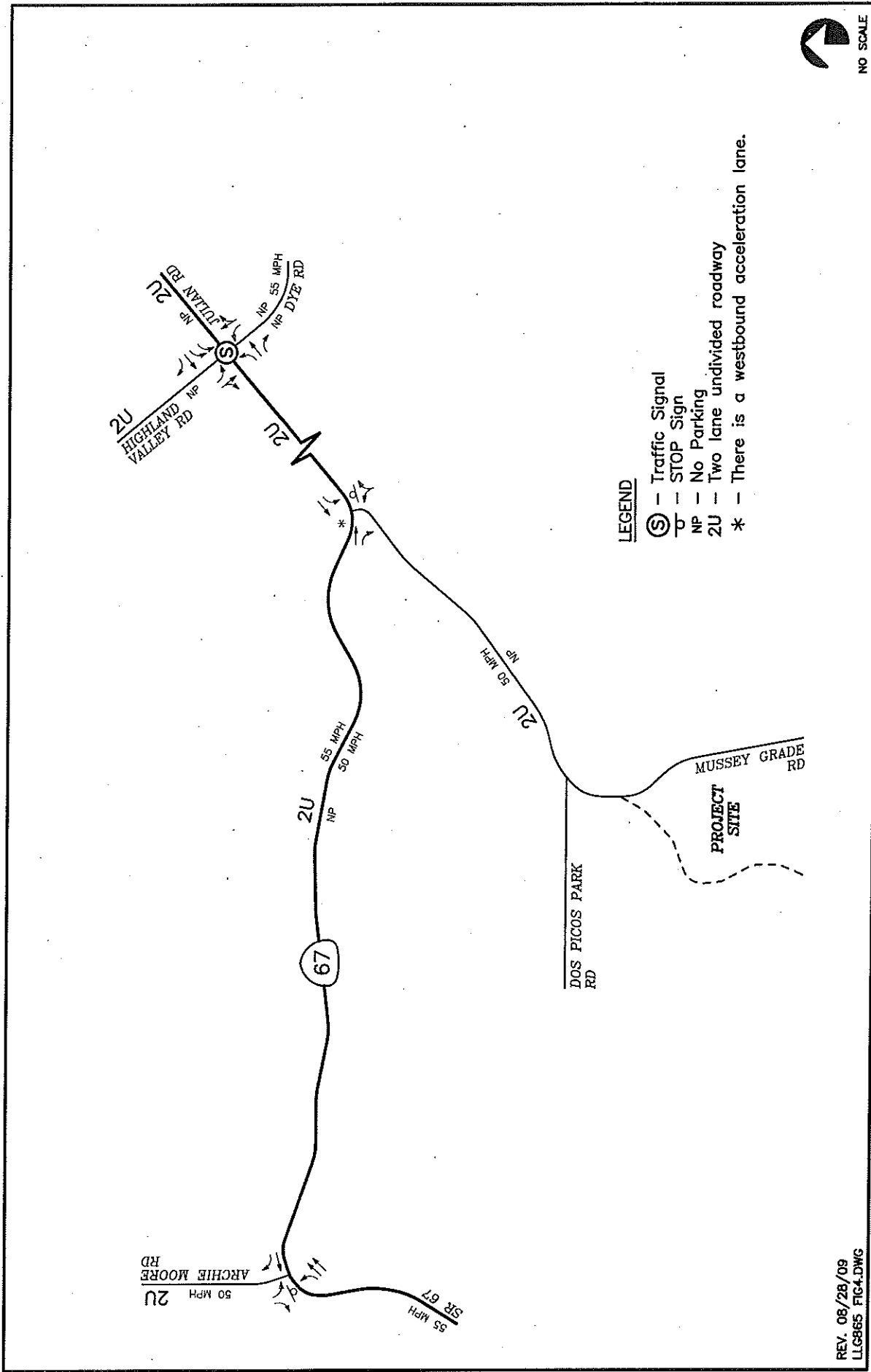
- a. Level of Service. County threshold for LOS F for two lane highway segment with signalized intersection spacing > 1 mile = 22,900 ADT.



# Figure 4

EXISTING CONDITIONS DIAGRAM

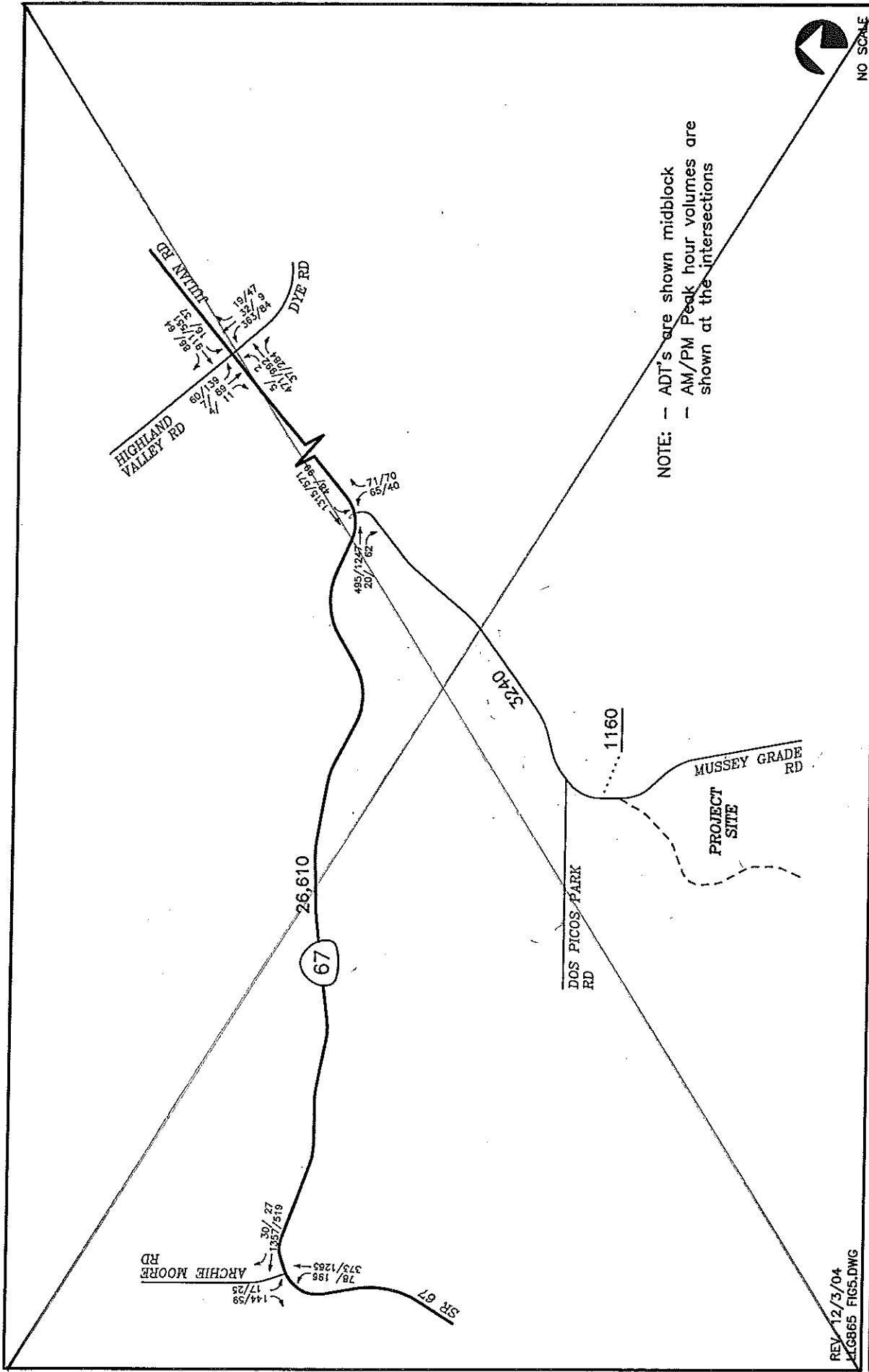
SIERRA DEL MAR



# Figure 4

EXISTING CONDITIONS DIAGRAM

SIERRA DEL MAR

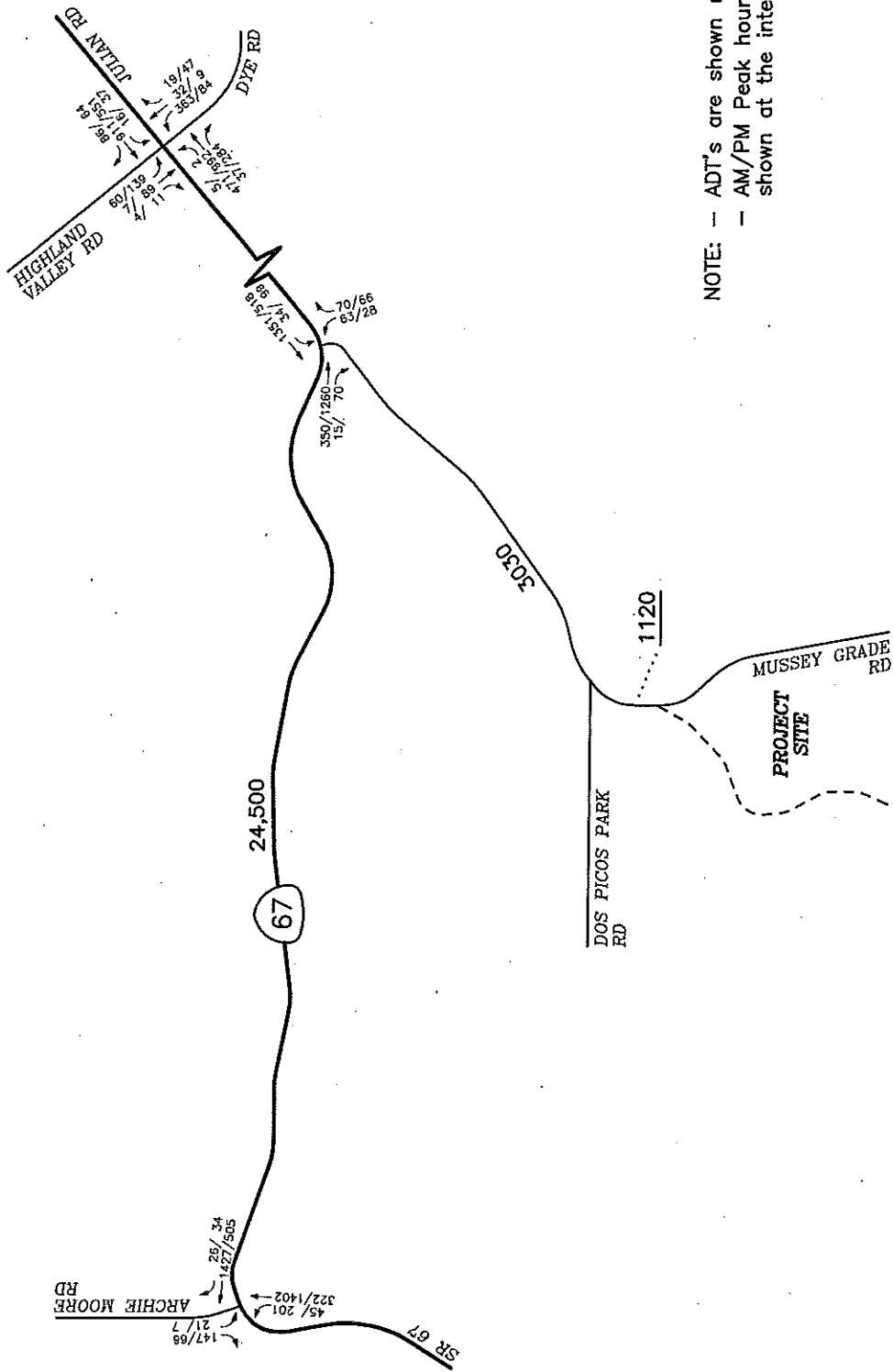


**Figure 5**

**EXISTING TRAFFIC VOLUMES  
AM/PM PEAK HOURS & ADTs**

SIERRA DEL MAR



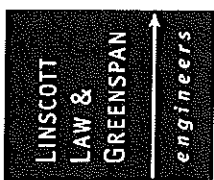


# Figure 5

EXISTING TRAFFIC VOLUMES  
AM/PM PEAK HOURS & ADTs

SIERRA DEL MAR

REV. 08/25/09  
LLC865\_FIG5.DWG



### **3.0 SIGNIFICANCE CRITERIA**

The following criterion was utilized to evaluate potential significant impacts, based on the County's documents "Guidelines for Determining Significance", effective June 30, 2009.

#### **3.1.1 Road Segments**

Pursuant to the County's General Plan Public Facilities Element (PFE), new development must provide improvements or other measures to mitigate traffic impacts to avoid:

- a. Reduction in Level of Service (LOS) below "C" for on-site Circulation Element roads;
- b. Reduction in LOS below "D" for off-site and on-site abutting Circulation Element roads; and
- c. "Significantly impacting congestion" on roads that operate at LOS "E" or "F". If impacts cannot be mitigated, the project will be denied unless a statement of overriding findings is made pursuant to the State CEQA Guidelines. The PFE, however, does not include specific guidelines/thresholds for determining the amount of additional traffic that would "significantly impact congestion" on such roads, as that phrase is used in item (c) above.

The County has created the following guidelines to evaluate likely traffic impacts of a proposed project for road segments and intersections serving that project site, for purposes of determining whether the development would "significantly impact congestion" on the referenced LOS E and F roads. The guidelines are summarized in *Table 3-1*. The thresholds in *Table 3-1* are based upon average operating conditions on County roadways. It should be noted that these thresholds only establish general guidelines, and that the specific project location must be taken into account in conducting an analysis of traffic impact from new development.

**TABLE 3-1**  
**MEASURES OF SIGNIFICANT PROJECT IMPACTS TO CONGESTION ON ROAD SEGMENTS**  
**ALLOWABLE INCREASES ON CONGESTED ROAD SEGMENTS**

<u>Level of Service</u>	<u>Two-Lane Road</u>	<u>Four-Lane Road</u>	<u>Six-Lane Road</u>
<u>LOS E</u>	<u>200 ADT</u>	<u>400 ADT</u>	<u>600 ADT</u>
<u>LOS F</u>	<u>100 ADT</u>	<u>200 ADT</u>	<u>300 ADT</u>

*General Notes:*

1. By adding proposed project trips to all other trips from a list of projects, this same table must be used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes any trips must mitigate a share of the cumulative impacts.
2. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.

**On-site Circulation Element Roads**—PFE, Transportation, Policy 1.1 states that “new development shall provide needed roadway expansion and improvements on-site to meet demand created by the development, and to maintain a Level of Service C on Circulation Element Roads during peak traffic hours”. Pursuant to this policy, a significant traffic impact would result if:

- The additional or redistributed ADT generated by the proposed land development project will cause on-site Circulation Element Roads to operate below LOS C during peak traffic.

**Off-Site Circulation Element Roads**—PFE, Transportation, Policy 1.1 also states that “new development shall provide needed roadway expansion and improvements off-site to meet demand created by the development, and to maintain a Level of Service D on Circulation Element Roads.” “New development that would significantly impact congestion on roads operating at LOS E or F, either currently or as a result of the project, will be denied unless improvements are scheduled to improve the LOS to D or better or appropriate mitigation is provided.” The PFE, however, does not specify what would significantly impact congestion or establish criteria for evaluating when increased traffic volumes would significantly impact congestion. The following significance guidelines provided are the County's preferred method for evaluating whether or not increased traffic volumes generated or redistributed from a proposed project will “significantly impact congestion” on County roads, operating at LOS E or F, either currently or as a result of the project.

Traffic volume increases from projects that result in one or more of the following criteria will have a significant traffic impact on a road segment, unless specific facts show that there are other circumstances that mitigate or avoid such impacts:

- The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a Circulation Element Road or State Highway currently operating at LOS E or LOS F, or will cause a Circulation Element Road or State Highway to operate at a LOS E or LOS F as a result of the proposed project as identified in Table 3-1, or

- The additional or redistributed ADT generated by the proposed project will cause a residential street to exceed its design capacity.

### **3.1.2 Intersections**

This section provides guidance for evaluating adverse environmental effects a project may have on signalized and unsignalized intersections.

**Signalized Intersections**—Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service traffic impact on a signalized intersection:

- The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a signalized intersection currently operating at LOS E or LOS F, or will cause a signalized intersection to operate at a LOS E or LOS F as identified in Table 3-2.

**Unsignalized Intersections**—the operating parameters and conditions for unsignalized intersections differ dramatically from those of signalized intersections. Very small volume increases on one leg or turn and/or through movement of an unsignalized intersection can substantially affect the calculated delay for the entire intersection. Significance criteria for unsignalized intersections are based upon a minimum number of trips added to a critical movement at an unsignalized intersection.

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service traffic impact on an unsignalized intersection:

- The additional or redistributed ADT generated by the proposed project will add 20 or more peak hour trips to a critical movement of an unsignalized intersection, and cause an unsignalized intersection to operate below LOS D, or
- The additional or redistributed ADT generated by the proposed project will add 20 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS E, or
- The additional or redistributed ADT generated by the proposed project will add 5 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate at LOS F, or
- The additional or redistributed ADT generated by the proposed project will add 5 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS F, or
- Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, it is found that the generation rate is less than those specified above, and would significantly impact the operations of the intersection.

**TABLE 3-2**  
**MEASURES OF SIGNIFICANT PROJECT IMPACTS TO CONGESTION ON INTERSECTIONS**  
**ALLOWABLE INCREASES ON CONGESTED INTERSECTIONS**

<u>Level of service</u>	<u>Signalized</u>	<u>Unsignalized</u>
<u>LOS E</u>	<u>Delay of 2 seconds</u>	<u>20 peak hour trips on a critical movement</u>
<u>LOS F</u>	<u>Delay of 1 second, or 5 peak hour trips on a critical movement</u>	<u>5 peak hour trips on a critical movement</u>

**General Notes:**

1. A critical movement is one that is experiencing excessive queues.
2. By adding proposed project trips to all other trips from a list of projects, these same tables are used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes any trips must mitigate a share of the cumulative impacts.
3. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.

### **3.2 Two-Lane Highway Segments**

In addition, Table 3-3 from the adopted "Guidelines for Determining Significance" was used to determine significance on the portion of SR 67 between Archie Moore Road and Mussey Grade Road.

**TABLE 3-3**  
**MEASURES OF SIGNIFICANT PROJECT IMPACTS TO CONGESTION**  
**ALLOWABLE INCREASES ON TWO-LANE HIGHWAYS**  
 (With Signalized Intersection Spacing Over One Mile)

<u>Level of Service</u>	<u>LOS Criteria</u>	<u>Impact Significance Level</u>
<u>LOS E</u>	<u>&gt; 16,200 ADT</u>	<u>&gt;325 ADT</u>
<u>LOS F</u>	<u>&gt; 22,900 ADT</u>	<u>&gt;225 ADT</u>

**General Notes:**

1. Where detailed data is available, the Director of Public Works may also accept a detailed level of service analysis based upon the two-lane highway analysis procedures provided in the Chapter 20 Highway Capacity Manual.

### **3.3 Congestion Management Program Requirements**

The Congestion Management Program (CMP), adopted on November 22, 1991 and most recently updated in 2008, is intended to link land use, transportation and air quality through level of service performance. The CMP requires an Enhanced CEQA Review for projects that are expected to generate more than 2,400 ADT or more than 200 peak hour trips. As the project trip generation summarizes in Section 4.2, the project does not exceed the CMP thresholds on either a daily or peak hour basis. Therefore a CMP analysis is not required.

## **4.0 PROJECT IMPACT ANALYSIS**

### **4.1 Analysis Methodology**

Level of service (LOS) is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Level of service designation is reported differently for signalized intersections, unsignalized intersections and roadway segments.

#### **4.1.1 Intersections**

Signalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay was determined utilizing the methodology found in Chapter 16 of the 2000 Highway Capacity Manual (HCM), with the assistance of the Synchro (version 7.0) computer software. The delay values (represented in seconds) were qualified with a corresponding intersection Level of Service (LOS). Signalized intersection calculation worksheets and a more detailed explanation of the methodology are attached in Appendix B.

Unsignalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay and Levels of Service (LOS) was determined based upon the procedures found in Chapter 17 of the 2000 Highway Capacity Manual (HCM), with the assistance of the Synchro (version 7.0) computer software. Unsignalized intersection calculation worksheets and a more detailed explanation of the methodology are attached in Appendix B.

#### **4.1.2 Street Segments**

Street segment analysis is based upon the comparison of daily traffic volumes (ADTs) to the County of San Diego's Roadway Classification, Level of Service, and ADT Table. This table provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics. The County of San Diego's Roadway Classification, Level of Service, and ADT Table is attached in Appendix C. Mussey Grade Road is a Non-Circulation Element (CE) public road. Two-lane CE road capacity criteria has been used for the purpose of roadway segment LOS assessment, but Mussey Grade Road functions similar to a Non-CE Residential Collector which can accommodate local traffic volumes up to 4,500 ADT with stable flow. As stated in the Public Road Standards, Levels of Service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic.

#### **4.1.3 Two-Lane Highway Analysis**

The County of San Diego has published guidelines for the analysis of designated County Circulation Element Roads that are State Highways that are managed and maintained by Caltrans. These highways include SR 67, which operates as a two-lane highway. LOS criteria is provided for segments with signalized intersection spacing greater than one-mile, and signalized intersection

spacing less than one mile. Where signalized intersection spacing is greater than one-mile, LOS is determined using an ADT look-up table, similar to street segments listed above. Where signalized intersection spacing is less than one mile, analysis considers overall intersection delay along the corridor, similar to Urban Street analysis in Chapter 15 of the *Highway Capacity Manual*.

## 2.34.2 Project Trip Generation/Distribution/Assignment

### 2.4 Project Trip Generation

Table 24-1 shows the traffic generation calculations for the proposed project. The existing camp is used year-round with two distinct types of activities depending on the time of year ("On-Season" during the summer months and "Off-Season" for the balance of the year). However, it is possible that both the summer camp and Retreat Center uses could occur simultaneously. Therefore, the project traffic generation was calculated for the maximum number of potential users, 748. Again, the current project description (November 2009) calls for a reduction in the number of users to 615. Thus, the analysis and findings of this report represent a worst-case scenario.

TABLE 2  
WEEKDAY PROJECT TRAFFIC GENERATION

	AMOUNT	VOR <sup>1</sup>	INBOUND TRIPS	ADT <sup>2</sup>	AM PEAK <sup>5</sup> HOUR TRIPS		PM PEAK <sup>5</sup> HOUR TRIPS	
					IN	OUT	IN	OUT
Campers	523	15	35	70	0	0	0	0
Retreat Center Guests	175	2.33 <sup>4</sup>	80	160	0	0	20	0
Staff	25 <sup>3</sup>	2	12	25	10	0	0	0
Miscellaneous/ Deliveries	10	1	10	20	1	1	1	1
TOTAL				275	11	1	21	1

Notes:

1. Vehicle Occupancy Rate = number of passengers per vehicle.

2. ADT = Average Daily Traffic.

3. Total staff is 50, about half of which arrive/depart weekly.

4. Retreat users are as follows: 40% Vanpool (15/van), 40% carpool (2/car) and 20% drive-alone (1/car). This equals 175 guests arriving in 75 vehicles, which averages to 2.33 guests per vehicle. Ultimately, 50% of the total users arrive between 4 and 6 PM, or 25% during the peak hour. Thus, 20 of 80 (25%) of the inbound trips occur during the peak hour, one day a week.

5. The peak hour trip factors are based on the project description on pages 1 and 5 of this report. The arrival of carpools and retreat guests does not occur between 7 and 9 in the morning, and therefore, the AM peak hour trip estimates are zero.

Consideration was given to the means by which camp occupants arrive, by utilizing a Vehicle Occupancy Ratio (VOR). This ratio accounts for multiple occupants in vehicles (i.e. carpools, vanpools, busses), which is an important aspect of this project's day-to-day operations. Many of the occupants will arrive via passenger vans and carpools. Based on past experience for events at the site, the applicant estimates that 40% of retreat guests arrive by van, 40% by carpool, while 20% are

single occupancy. To further substantiate these percentages, data was obtained from the existing 78-acre Oakbridge Camp, which is located a few miles from the site. The EIR for the expansion of the camp was certified on December 4, 2002 (P77-055W). The Oakbridge Camp tracks their arrivals in terms of number of guests and number of vehicles. ~~Appendix B shows the results.~~ This camp is smaller but is also in a rural setting and since both are youth camps and the activities at the two camps are similar, it is logical that the carpool and vanpool arrival percentages would be similar. ~~This table shows that The Oakbridge Camp data showed that average auto occupancy was 2.7, and their/vehicle, while average van occupancy was 14.6/vehicle.~~ These occupancy rates closely match the rates assumed in Table 24-1 of 2.33/vehicle and 15.0/vehicle respectively.

~~The project traffic generation for the camp at buildout assumes that all 748 users (campers, staff and Retreat Center users) are present. The traffic study addresses the impacts to the street system during the daily and peak hours of a weekday. The youth camp component of the project generates very little traffic (if any) on weekdays while the Retreat Center component generates some peak hour traffic on Fridays. Overall, neither component of the project contributes much traffic to the weekday commuter peak hour condition in the area because of the weekend nature of both uses.~~

~~Table 1 shows that there are no weekday peak hour trips generated by the campers, since they all arrive on Monday afternoons before the peak hour. The Retreat Center guests are shown to arrive in part during the PM peak hour, since only half of the guests typically arrive during the 4-6 PM time frame, of which half again are expected to arrive within the peak hour. There are no AM trips associated with the Retreat Center users, as they leave on Sundays. One half of the staff is assumed to arrive/depart weekly, with 10 assumed to arrive during the AM peak hour. Finally, it is assumed that there will be an average of 10 Miscellaneous/Delivery trips on any given weekday, of which one round trip is assumed during both the AM and PM peak hours. Again, the project is atypical in that its low generation is variable by time of year ("On Season" vs. "Off Season"), and its trips occur nearly exclusively during the off peak days and hours of the week.~~

~~The "miscellaneous" row in Table 2 accounts for trips such as deliveries and supply pick-up. The applicant anticipates a potential condition of the Major Use Permit which would require them to maintain an on-site vehicle registration log to be submitted quarterly for the first year, and yearly thereafter to the satisfaction of the Director of the Department of Planning and Land Use. The vehicle log could be used to compare the actual project operations (e.g., numbers and types of vehicles, and arrival/departure times) with the site-specific assumptions used in this traffic study to validate the findings of the EIR.~~

~~Table 4-1 tabulates the total project traffic generation. The total project is calculated to generate approximately 275 ADT with 11 inbound/ 1 outbound trips during the AM peak hour and 21 inbound/ 1 outbound trips during the PM peak hour. These volumes include trips made by campers and retreat center guests, staff, and miscellaneous trips and deliveries (such as trips made by employees into town to purchase goods and/or supplies). By virtue of the site's operational characteristics (high carpool/vanpool percentages, weekend and off-peak arrivals/departures, on-site staff season-long), it generates very few weekday, commuter peak hour trips.~~



The occupancy of the camp and retreat center used in *Table 4-1* above is derived from the occupancy of the proposed structures, the expected reservations, proposed camp operations, and the employee counts, as outlined in the project description. The site-specific traffic generation method used for this project is appropriate, since the published SANDAG trip generation rates typically used by the County do not include rates for camps such as the proposed project. Also, as of November 2009, the proposed camp population has been reduced to 615 users, which is less than the maximum 748 users studied in this report. Therefore, the findings of this report represent a worst-case scenario, and are considered conservative.

**TABLE 4-1**  
**WEEKDAY PROJECT TRAFFIC GENERATION**

Trip Type	AMOUNT	VOR <sup>a</sup>	INBOUND TRIPS	ADT <sup>b</sup>	AM PEAK <sup>c</sup> HOUR TRIPS		PM PEAK <sup>c</sup> HOUR TRIPS	
					IN	OUT	IN	OUT
Campers	523	15	35	70	0	0	0	0
Retreat Center Guests	175	2.33 <sup>d</sup>	80	160	0	0	20	0
Staff	25 <sup>e</sup>	2	12	25	10	0	0	0
Miscellaneous/Deliveries	10	1	10	20	1	1	1	1
<b>TOTAL</b>	<b>=</b>	<b>=</b>	<b>=</b>	<b>275</b>	<b>11</b>	<b>1</b>	<b>21</b>	<b>1</b>

**Notes:**

a. Vehicle Occupancy Rate = number of passengers per vehicle.

b. ADT = Average Daily Traffic.

c. Total staff is 50, about half of which arrive/depart weekly.

d. Retreat users are as follows: 40% Vanpool (15/van), 40% carpool (2/car) and 20% drive alone (1/car). This equals 175 guests arriving in 75 vehicles, which averages to 2.33 guests per vehicle. Ultimately, 50% of the total users arrive between 4 and 6 PM, or 25% during the peak hour. Thus, 20 of 80 (25%) of the inbound trips occur during the peak hour, one day a week.

e. The peak hour trip factors are based on the project description in Section 2.0 of this report. The arrival of carpools and retreat guests does not occur between 7 and 9 in the morning, and therefore, the AM peak hour trip estimates are zero.

### 2.54.3 Project Trip Distribution/Assignment

The project-generated traffic was distributed to the street system based on project access, the characteristics of the roadway system, conversations with current staff, and the project site's relative location to metropolitan areas. Ninety (90) percent of the Retreat Center guest trips were estimated to come from the west, (metropolitan San Diego), while ninety (90) percent of the staff trips were estimated to come from the east, (Julian, Alpine). *Figure 6a* shows the regional traffic distribution for the "groups", while *Figure 6b* shows the "staff" and "miscellaneous" trip distribution. *Figure 7* shows the assignment of total project traffic based on these distributions. *Figure 8* shows the existing + project traffic volumes.

The pick-up/drop-off points for the Camp are determined by the local branch of the Salvation Army of which there are several in San Diego County. They vary from week to week.

### 3.0 NEAR TERM CUMULATIVE PROJECTS

As of September 1, 2004, traffic from eighty-five (85) other cumulative projects in the Ramona area have been compiled and submitted to the County. LLG Engineers is part of a consortium of traffic engineers that has developed a summary of these cumulative projects. *Figure 9* shows the total cumulative peak hour volumes and ADTs. *Figure 10* shows the existing + project + near term cumulative projects traffic volumes. *Appendix C* contains the entire collection of cumulative projects.

### 4.0 SIGNIFICANCE CRITERIA

The criteria to determine significant traffic impacts for County roadways and intersections was obtained from the 2004 County of San Diego Draft Guidelines for determining significance. *Table 3* from this document is shown below. In general, if project only traffic causes the thresholds in the table to be exceeded, the impacts are determined to be a direct significant impact and if the project together with other cumulative projects causes the thresholds to be exceeded, the impact is determined to be a cumulative significant impact.

Figure 6a

TABLE 3  
COUNTY OF SAN DIEGO SIGNIFICANCE CRITERIA

Road Segments			
	2-Lane Road	4-Lane Road	6-Lane Road
LOS E	200 ADT	400 ADT	600 ADT
LOS F	400 ADT	200 ADT	300 ADT
Intersections			
	Signalized	Unsignalized	
LOS E	Delay of 2 seconds	20 peak hour trips on a critical movement	
LOS F	Delay of 1 second, or 5 peak-hour trips on a critical movement	5 peak-hour trips on a critical movement	

The traffic study also analyzes Caltrans-controlled State two-lane Highway segments of SR 67 in the community of Ramona using the peak-hour two-lane highway analysis methods contained in the Highway Capacity Manual. The measure of effectiveness for these segments is presented in terms of speed (miles per hour), and is not a function of ADT or critical movement trips, as discussed in the County's draft criteria presented above. Therefore, to determine significance, the traffic study relies on the language contained in the County's Public Facilities Element (PFE) as follows:

"The County General Plan Public Facilities Element states that a discretionary project will only be approved if the existing Level of Service (LOS) on off-site and on-site abutting Circulation Element roads is not reduced below LOS D. Appropriate mitigation measures must be provided if a Proposed Project would **significantly impact congestion** (emphasis added) on roads that currently, or as a result of the project, operate at LOS E or F. Appropriate mitigation includes a fair share contribution in the form of road improvements or a fair share contribution to an established fee program or projects."

Therefore, if the project does not "significantly impact congestion", no project or cumulative impact is calculated on a particular two-lane highway segment.

## 5.0 TRAFFIC ANALYSIS METHODOLOGY

The traffic analysis assesses the key intersections, County roadway segments and State-controlled two-lane highway segments in the project area.

The ~~unsignalized intersections~~ were analyzed by determining the delay and Levels of Service based on Chapter 17 of the 2000 Highway Capacity Manual (HCM). The Caltrans ILV method was ~~not~~ utilized since the intersection is unsignalized. Specific inputs including peak hour volume, lane geometry, approach control, and median type are among the user-defined inputs included in the analysis. ~~Appendix D~~ contains the unsignalized intersection analysis. ~~Table 4~~ shows a summary of the unsignalized intersection operations during the AM and PM peak hour. This table reports an overall delay and Level of Service (LOS) for the minor street approach.

TABLE 4  
INTERSECTION OPERATIONS

INTERSECTION	PEAK HOUR	MOVEMENT	EXISTING		EXISTING + PROJECT		$\Delta^e$	EXISTING + PROJECT + CUMULATIVE PROJECTS	
			DELAY <sup>a</sup>	LOS <sup>b</sup>	DELAY	LOS		DELAY	LOS
SR 67/Mussey Grade Road	AM	NB-L <sup>d</sup>	28.2	D	32.6	D	N/A	289.6	F
	PM	NB-L	35.2	E	49.1	E	N/A	442.1	F
SR 67/Archie Moore Road	AM	SB-L <sup>e</sup>	105.5	F	105.8	F	N/A	1019.0	F
	PM	SB-L	282.8	F	296.3	F	N/A	3589.0	F
SR 67/Dye Road/ Highland Valley Road	AM	Signalized	57.4	E	58.6	E	1.2	229.5	F
	PM	Signalized	42.4	D	42.4	D	0.0	132.6	F

**Footnotes:**

a. Average delay expressed in seconds per vehicle.

b. LOS = Level of Service.

c.  $\Delta$  = project attributable increase in delay (signalized intersections only)

d. NB = Northbound, L = Left turn (unsignalized intersection)

e. --

**Note:** See Figure 7 for the project's contribution to critical movement volumes.

UNSIGNALIZED

DELAY/LOS THRESHOLDS

Delay	LOS
0.0 < 10.0	A
10.1 to 15.0	B
15.1 to 25.0	C
25.1 to 35.0	D
35.1 to 50.0	E
> 50.1	F

**TABLE 5**  
**STREET SEGMENT LEVEL OF SERVICE THRESHOLD DESCRIPTIONS**

LEVEL OF SERVICE	DESCRIPTION
A	Describes primarily free-flow operations. Average operating speeds at the free-flow speed generally prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.
B	Also represents reasonably free-flow, and speeds at the free flow speed are generally maintained. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high.
C	Provides for flow with speeds still at or near the free-flow speed of the roadway. Freedom to maneuver within the traffic stream is noticeably restricted at LOS C, and lane changes require more vigilance on the part of the driver. The driver now experiences a noticeable increase in tension because of the additional vigilance required for safe operation.
D	The level at which speeds begin to decline slightly with increasing flows. In this range, density begins to deteriorate somewhat more quickly with increasing flows. Freedom to maneuver within the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort levels.
E	Describes operation at capacity. Operations in this level are volatile, because there are virtually no usable gaps in the traffic stream. At capacity, the traffic stream has no ability to dissipate even the most minor disruptions, and any incident can be expected to produce a serious breakdown with extensive queuing.
F	Describes breakdowns in vehicular flow. Such conditions generally exist within queues forming behind breakdown points such as traffic incidents and recurring points of congestion. Whenever LOS F conditions exist, there is a potential for them to extend upstream for significant distances.

SOURCE: Highway Capacity Manual, 1994.

**TABLE 6**  
**DAILY STREET SEGMENT OPERATIONS**

STREET SEGMENT	CAPACITY (LOS E) <sup>1</sup>	EXISTING			EXISTING+ PROJECT			V/C INCREASE	EXISTING + PROJECT + CUMULATIVE PROJECTS		
		VOL	V/C	LOS	VOL	V/C	LOS		VOL	V/C	LOS
<b>Mussey Grade Road</b>											
—s/o SR 67	4,500	3,240	-	C+ <sub>2</sub>	3,515	-	C+ <sup>2</sup>	—	3,781	-	C+ <sup>2</sup>
—s/o Dos Picos Park Road	4,500	1,160	-	C+ <sub>2</sub>	1,435	-	C+ <sup>2</sup>	—	1,701	-	C+ <sup>2</sup>

**NOTES:**

1. Capacity based on County of San Diego Standards. Levels of Service are not applied to non-Circulation Element roadways as per County of San Diego Street Segment LOS Thresholds (see Appendix C). Therefore, an LOS of C+ indicates a Level of Service between LOS A and LOS C, where an LOS of C indicates a Level of Service between LOS C and LOS F.
2. Mussey Grade Road is a non-Circulation Element road with a capacity of 4,500 ADT at LOS C (see Appendix E).

**TABLE 7**  
**HCM TWO-LANE HIGHWAY ANALYSIS**

Segment	Peak Hour	Existing			Existing + Project					Existing + Project + Cumulative				
		Speed	% Time Following	LOS	Speed	% Time Following	LOS	A Speed	A % Time Following	Speed	% Time Following	LOS	A Speed	A % Time Following
<b>SR 67</b> Archie Moore Road to Mussey Grade Road	AM	27.7	101.4	F	27.7	101.4	F	0.0	0.0	19.0	100.6	F	8.7	0.8
	PM	27.8	98.7	E	27.6	98.8	E	0.1	0.1	18.5	97.8	F	9.1	1.0

HCM = Highway Capacity Manual;  
Speed = Average Travel Speed, shown in miles per hour (MPH);  
A = Project attributable decrease in APII or increase in percent time following.

## **4.4 Existing + Project Conditions**

### **4.4.1 Peak Hour Intersection Levels of Service**

*Table 4-2a* summarizes the existing + project intersections Level of Service. As seen in *Table 4-2*, with the addition of project traffic, the *signalized intersection* was analyzed by determining the delay and Levels of Service based on Chapter 16 of the 2000 Highway Capacity Manual (HCM). Specific inputs including peak hour volume, lane geometry, signal phasing and timing, availability of parking, vehicle platoon and percent of heavy vehicles are among the user-defined inputs included in the analysis. *Appendix D* also contains the signalized intersection analysis. *Table 4* also shows a summary of the signalized intersection operations during the AM and PM peak hour. This table reports the average control delay and Level of Service (LOS) for the intersection.

The County's non-Circulation Element street segment was assessed by comparing the street segment volume to the capacity of the roadway based on County of San Diego standards. *Table 5* is a description of the various street segment LOS thresholds. *Table 6* shows a summary of the street segment Levels of Service in the project area. *Appendix E* contains a table depicting the County's LOS thresholds.

The State (Caltrans)-controlled two-lane highway segments were assessed by calculating the decrease in speed and increase in "percent time following" due to the addition of project and cumulative project traffic on the highway segment during the peak hour in the peak direction, based on Chapter 20 of the 2000 HCM. Specific inputs to the SR 67 analysis including peak hour volume (as counted), peak hour factor (0.92), shoulder width, segment length, highway class (Class I), terrain type (rolling), heavy vehicle Passenger Car Equivalence (2.0 for trucks), free flow speed and access points per mile are among the user-defined inputs included in the analysis. Based on field observations, the shoulder width on SR 67 is highly variable but it was determined that an average width of 4 feet was appropriate. A lane width of 12 feet was measured and utilized in the analysis. *Table 7* shows a summary of the two-lane State Highway Levels of Service in the project area. *Appendix F* contains the two-lane highway analysis.

The following is a description of the existing, existing + project, and existing + project + near term cumulative street system operations:



## 5.1 Existing Operations

~~Table 4~~ shows a summary of the existing operations at the key unsignalized intersections. This table shows that the level of service for the critical northbound approach from Mussey Grade Road to SR 67 is LOS D during the AM peak and LOS E during PM peak hour. The table also shows that the level of service for the southbound approach from Archie Moore Road to SR 67 is LOS F during both the AM and PM peak hours. This is due to the high volume of peak hour traffic on SR 67.

Table 4 also shows a summary of the existing operations at the key SR 67/Dye Road/ Highland Valley Road signalized intersection. This intersection is calculated to operate at LOS E and LOS D during the AM and PM peak hours, respectively. There are long queues on for the westbound to southbound movement from Dye Road to SR 67 southbound during the AM peak hour.

~~Table 6~~ shows a summary of the existing daily operations on the key street segments in the project area. Appendix C shows that for the non-circulation element Mussey Grade Road, the capacity at LOS C is 4,500 ADT (residential collector). Table 5 shows that the two existing daily traffic volumes on Mussey Grade Road are 3,240 and 1,160, within the capacity of the roadway. Therefore, a Level of Service C+ was assigned since the LOS is not precisely ascertainable from the table.

~~Table 7~~ shows a summary of the existing peak hour operations on the Caltrans-controlled two-lane highway segment in the project area. This table shows that SR 67 currently operates at LOS F during the AM peak hour and LOS E during the PM peak hour.

## 5.2 Existing + Project Operations

~~Table 4~~ shows that the critical approaches at both unsignalized intersections continue to operate at LOS E or worse during at least one peak hour with the addition of the very small amount of project traffic. ~~Figure 7~~ shows that the project does not exceed the 5 trips allowed at an LOS F operating unsignalized intersection, as shown on Table 3.

Table 4 also shows the peak hour LOS at the signalized SR 67/ Dye Road/ Highland Valley Road intersection. This intersection is calculated to continue to operate at LOS E and LOS D during the AM and PM peak hours, respectively. The project does not exceed the 20-trip/ 2.0 second delay increase allowed at an LOS E operating unsignalized intersection, as shown on Table 3.

~~Table 6~~ shows that the Mussey Grade Road street segments remain at LOS C+, as the addition of project traffic does not breach the 4,500 ADT threshold for LOS C.

~~Table 7~~ shows that with the addition of project traffic to the two-lane highway segment, the SR 67 segment in the project area of SR 67/Dye Road continues to operate at LOS E or LOS F during the peak hour. The maximum project attributable decrease in speed on the segment is calculated at 0.1 mph. This fractional decrease in speed would not be noticeable to the average driver, and would not be considered to "significantly impact congestion", as described in the County Public Facilities Element Criteria discussed in Section 6.0. The percent time following increases by 0.1 due to the project.

~~No direct project impacts are calculated based on the stated significance criteria in Section 6.0.~~

### **5.3 Existing + Project + Near Term Cumulative Projects Operations**

~~Table 4 shows that the addition of the near term cumulative projects traffic is calculated to degrade the critical northbound approach delay at the SR 67/Mussey Grade Road intersection to LOS F during the AM and PM peak hours. The critical southbound approach delay at SR 67/Archie Moore Road intersection is calculated to operate at LOS F during both the AM and PM peak hours. The capacity of the unsignalized analysis software is nearly exceeded by the large volumes forecasted on SR 67 with the cumulative projects.~~

~~Table 4 also shows the peak hour LOS at the signalized SR 67/ Dye Road/ Highland Valley Road. This intersection degrades to LOS F operations during both peak hours with large delays due to high cumulative volumes on both SR 67 and Dye Road.~~

~~Table 6 shows that the Mussey Grade Road street segments remain at LOS C+, as the addition of near term cumulative project traffic does not breach the 4,500 ADT threshold for LOS C.~~

~~Table 7 shows that with the addition of cumulative project traffic to the two-lane highway segment, the SR 67 segment in the project areaduring the AM peak hour an increase in delay of 1.6 seconds, while the PM peak hour continues to operate at LOS F during both peak hours. The maximum cumulative project attributable decrease in speed on the segment is calculated at 9.1 mph.~~

~~Cumulative project impacts are calculated for the three poorly operating intersections and for the two-lane highway segment analyzed in the study area. The project adds at least one trip to every location calculated to operate at LOS F with cumulative traffic volumes. Specific cumulative impacts and mitigation measures are discussed in Section 11.0 of the study.~~

## 6.0 QUEUING ANALYSIS

The HCM-based computer programs that calculate the signalized intersection Levels of Service and delay also calculate the average queue length (in vehicles) by movement at an intersection. LLG compared the calculated left turn queue lengths at the signalized SR 67/ Dye Road/ Highland Valley Road intersection with and without project traffic to determine the additional queuing that would occur as a result of the project. The left turn movements are typically the most constrained. Since at signalized intersections, the left turn movement typically receives significantly D. The increase in delay during the AM peak hour is less green-time per cycle than the through movements. The northbound and southbound through movements queue on SR 67 was also calculated, two seconds allowed at LOS E-operating locations. *No significant direct project impacts are calculated.*

Table 8 shows a summary 4-2a also shows that the minor street movements at both *unsignalized intersections* at SR 67/ Archie Moore Road and SR 67/ Mussey Grade Road continue to operate at LOS F for both the AM and PM peak hours with the exception of the findings. **Appendix G** minor street movement for the SR 67 / Archie Moore Road intersection, which is calculated to operate at LOS C during the PM peak hour.

The County's significance criteria are based on the project's contribution to the "critical movement" of the unsignalized intersection. The critical movement is defined as a movement that experiences excessive queue, and therefore presumably a poor LOS. In situations where a minor street intersects a major road, the critical movement is the uncontrolled left-turn from the major street to the minor street. If the queues from through movements overflow the striped turn pocket, significant, negative effects on flow along the major road will occur. Conversely, queuing on the minor street, while inconvenient, will not affect overall intersection operations and delay the way it will on the major street.

At the SR 67/ Archie Moore Road intersection, the critical movement is the eastbound left-turn from SR 67 to Archie Moore Road. Were the queue to exceed the pocket at this location, it would have negative effects on eastbound through traffic on SR 67, which is the major road. Similarly, the critical movement at the SR 67/Mussey Grade Road is the westbound left-turn movement from SR 67 to Mussey Grade Road. Again, queues spilling back from the westbound pocket into westbound SR 67 traffic would have negative effects on the latter.

Table 4-2b shows the results of the queuea determination analysis: of whether a critical movement is present, based on a comparison of the calculated 95<sup>th</sup> percentile (worst-case) critical queue to the existing turn pocket which stores the queue. This table shows that the calculated critical queues are accommodated within the existing turn pockets. *No significant direct project impact to left-turn queuing at impacts are calculated.*

While the project contribution is not part of the critical move, the lack potential negative effects of project traffic on either intersection can be understood in very practical terms. At the SR 67/Archie Moore Road intersection, the project simply does not contribute any trips to any turns. All trips are through-trips on SR 67, so effects of project traffic would logically be minimal.

At the SR 67/Mussey Grade Road intersection, the project contributes 10 AM peak hour westbound left-turning trips, and 0 AM/PM peak hour left-turning trips during the weekday commuter peaks (see Figure 7, Project Traffic Volumes). For the AM peak hour contribution, these trips should be

considered in the context of commuter flow. The AM peak hour direction of commuter flow is westbound in the project area (see Figure 5, Existing Traffic Volumes). Conversely, the counterflow (lighter traffic) direction is eastbound. Table 4-1 has identified that the westbound left-turning trips are primarily potential staff trips, which are the only inbound trips during the weekday AM peak period. As they are westbound trips, they conflict only with the lighter eastbound counterflow traffic. This is why there is no queuing issue for the movement. It should also be noted these trips would not occur on a daily weekday basis, but only once a week as discussed in the project description.

The “zero” value for northbound left-turning project traffic volumes from Mussey Grade Road must be evaluated in the context of the project’s proposed operations. The project description states that staff will depart the site on Saturday afternoons, while campers will depart on Sunday afternoons. The latter are the trips that would produce a northbound left-turn movement. The analysis in this report is for weekday commuter peak hours and daily (24-hour) operations. Thus, no outbound peak hour trips are presented since none would occur during the weekday peak hours per the description.

Appendix B contains the existing + project intersection analysis worksheets. The queuing summaries are presented in the HCM analysis worksheets.

**TABLE 8**  
**INTERSECTION QUEUING SUMMARY**

INTERSECTION	MOVE- MENT	PEAK HOUR	EXISTING <sup>1</sup>	EXISTING + PROJECT		EXISTING + PROJECT + CUMULATIVE PROJECTS	
			QUEUE <sup>2</sup>	QUEUE	Δ	QUEUE	Δ
SR-67/Dye Road/Highland Valley Road	NBL	AM	1	1	0	3	2
		PM	1	1	0	2	1
	SBL	AM	2	2	0	4	2
		PM	5	5	0	11	6
	EBL	AM	4	4	0	9	5
		PM	14	14	0	29	15
	WBL	AM	33	33	0	110	77
		PM	8	8	0	23	15
	NBT	AM	18	18	0	39	21
		PM	65	66	1	143	78
	SBT	AM	71	73	2	155	84
		PM	14	15	1	31	17

Queue is shown in vehicles.

Δ = Change in queue.

EB = Eastbound, etc.

L = Left turn.

T = Thru movement.

1. The existing queues shown in this table are the calculated "average" queue over the peak hour.

2. LLG conducted *actual* queue observations at the intersection in July 2003. The actual queues at SR-67/Archie Moore Road varied from 1-5, but were only larger than 2 for short periods. The *actual* observed queues at the SR-67/Dye Road/ Highland Valley Road intersection were also close to the calculated queue. The westbound left turn (Dye Road onto SR-67) was observed to be 30 in the morning and the eastbound was observed to be 6-7. Overall, the HCM software queue calculation was similar to the actual observed queue.

#### 4.4.2 Segment Operations

Table 4-3 summarizes the existing + project roadway segment Level of Service. As seen in Table 4-3, with the addition of project traffic, the segments along Mussey Grade Road are calculated to continue to operate at acceptable LOS B or better, assuming two-lane CE capacity. Maximum traffic volumes with the project are 3,305 ADT, which are within the 4,500 ADT threshold identified for non-CE roadways. **No significant direct project impacts are calculated.**

#### 4.4.3 Two-Lane Highway Analysis

Table 4-4 shows that with the addition of project traffic to the two-lane highway segment, the two-lane highway segment would continue to operate at LOS F based on the County's thresholds for two-lane highway segments with signalized intersection spacing greater than one-mile. The

maximum project-attributable increase in ADT due is 212 ADT to this segment, which is less than the County's threshold of 225 ADT. *No significant direct project impacts are calculated.*

#### **4.5 Existing + Project + Cumulative Projects Conditions**

According to the *County of San Diego Report Format & Content Requirements* dated June 30, 2009, a project generating between 200-500 ADT such as the proposed project would not require a cumulative analysis if the applicant plans to participate in the TIF program (as the proposed project applicant does). Nonetheless, while a required, a cumulative analysis was conducted to be conservative.

Cumulative projects are other projects in the study area that will add traffic to the local circulation system in the near future. Based on the discussions with County of San Diego staff, a review of recently completed LLG projects within the community of Ramona, and researching the cumulative section from the approved "*Montecito Ranch*" Environmental Impact Report (EIR), April 2008, it was determined that traffic data from the "*Montecito Ranch*" cumulative section would be utilized for this project.

*Figure 9* shows the cumulative projects traffic volumes. *Figure 10* shows the existing + project + cumulative projects weekday traffic volumes.

##### **4.5.1 Peak Hour Intersection Levels of Service**

Table 4-2a summarizes the existing + project + cumulative projects intersections Level of Service. As seen in Table 4-2a, with the addition of cumulative and project traffic, all three study area intersections are calculated to operate at LOS F during both the AM and PM peak hours. The cumulative delay to the signalized SR 67/ Dye Road/ Highland Valley Road intersection is calculated to be zero vehicles during the AM and PM peak hours at any movement and a maximum of two vehicles to any through movement. This small impact to the queue is expected since the project adds very little peak hour traffic to SR 67 (See Figure 7). signalized intersection exceeds the County's allowable 1 second of increase to a LOS F intersection. *A Significant cumulative impact is calculated at this signalized intersection.*

However, with the addition of *cumulative* project traffic, Table 84-2b shows that the westbound left-turn queue (from Dye Road to SR 67) and the through the critical movement queue are calculated to increase by a large amount. determination for the existing + project + cumulative project conditions. This table shows increases in the critical queues at the SR 67 at/ Archie Moore Road and SR 67/ Mussey Grade Road intersections, which are calculated to operate at LOS F as described above. *Significant cumulative impacts are calculated at these unsignalized intersections.*

Appendix B contains the existing + project + cumulative projects intersection analysis worksheets.

##### **4.5.2 Segment Operations**

Table 4-3 summarizes the existing + project + cumulative projects roadway segment Level of Service. As seen in Table 4-3, with the addition of cumulative project traffic, the segments along Mussey Grade

Road are calculated to continue to operate at acceptable LOS B, assuming two-lane CE capacity. Maximum traffic volumes with cumulative projects are 3,585 ADT, which are within the 4,500 ADT threshold identified for non-CE roadways. *No significant cumulative impacts are calculated at these locations.*

#### **4.5.3 Two-Lane Highway Analysis**

Table 4-4 shows that with the addition of cumulative project traffic to the two-lane highway segment, the two-lane SR 67 segment west of Mussey Grade Road would continue to operate at LOS F. The cumulative project-attributable increase on this segment is 10,672 ADT, which exceeds the allowable increase of 225 ADT to an LOS F operating two-lane highway segment. *A significant cumulative impact is calculated at this location.*

**TABLE 4-2A**  
**NEAR-TERM INTERSECTION OPERATIONS**

Intersection	Control Type	Movement	Peak Hour	Existing		Existing + Project		Existing + Project + Cumulative Projects		Impact Type
				Delay <sup>a</sup>	LOS <sup>b</sup>	Delay	LOS	Delay	LOS	
1. SR 67 / Archie Moore Road	TWSC <sup>d</sup>	SBL	AM PM	>50.1 19.5	F C	>50.1 19.7	F C	>50.1 >50.1	F F	None
2. SR 67 / Mussey Grade Road	TWSC	NBL	AM PM	>50.1 >50.1	F F	>50.1 >50.1	F F	>50.1 >50.1	F F	None
3. SR 67 / Dye Road	Signal	All	AM PM	71.0 38.0	E D	72.6 38.0	E D	>80.1 70.5	F E	Cumulative

**Footnotes:**

- Average delay expressed in seconds per vehicle.
- Level of Service.
- A denotes the number of project trips added to the critical movement.
- TWSC – Two-Way Stop Controlled Intersection. Minor street left turn delay is reported.
- No critical movement is identified for this intersection since the EB left does not exceed the existing pocket.  
See Section 4.4 for more details.
- No critical movement is identified for this intersection since the WB left does not exceed the existing pocket.  
See Section 4.4 for more details.

**General Notes:**

- SBL = "Southbound Left", etc.
- Shading and BOLD typeface indicates a potentially significant impact.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 < 10.0	A	0.0 < 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
> 80.1	F	> 50.1	F



**TABLE 4-2B**  
**UNSIGNALIZED INTERSECTION "CRITICAL MOVEMENT" DETERMINATION**

Unsignalized Intersection	Potential Critical Movement	Pocket Length (feet)	Peak Hour	Existing		Existing + Project		Existing + Project + Cumulative	
				Queue (feet) <sup>a</sup>	Exceeds? <sup>b</sup>	Queue (feet)	Exceeds?	Queue (feet)	Significant? <sup>c</sup>
1. SR 67 / Archie Moore Road	Eastbound Left	560	AM	10	No	10	No	129	Yes
			PM	21	No	21	No	129	Yes
2. SR 67 / Mussey Grade Road	Westbound Left	150	AM	2	No	3	No	5	Yes
			PM	22	No	23	No	46	Yes

**Footnotes:**

- a. The calculated 95<sup>th</sup> percentile queue is shown in feet. Queues are calculated based on approaching volumes over the peak hour period. Queues of less than 25' (length of one queued vehicle) are calculated when the sum of hourly approaching vehicles is too low for a standing queue to develop.
- b. Does queue exceed pocket length? If yes, then critical movement exists.
- c. While the queue does not technically exceed the pocket length with the addition of cumulative project traffic, the minor street LOS for each intersection is LOS F (See Table 4-2d). The project adds to the overall cumulative projects' traffic and the LOS F operations; its contribution is considered significant.

**TABLE 4-3**  
**NEAR-TERM STREET SEGMENT OPERATIONS**

Street Segment	Existing Capacity (LOS E) <sup>a</sup>	Existing		Existing + Project			Existing + Project + Cumulative		Impact Type
		ADT <sup>b</sup>	LOS <sup>c</sup>	ADT	LOS	$\Delta$ <sup>d</sup>	ADT	LOS	
<b>Mussey Grade Road</b>									
South of SR 67	16,200	3,030	B	3,305	B	275	3,585	B	None
South of Dos Picos Park Road	16,200	1,120	A	1,395	A	275	1,675	B	None

**Footnotes:**

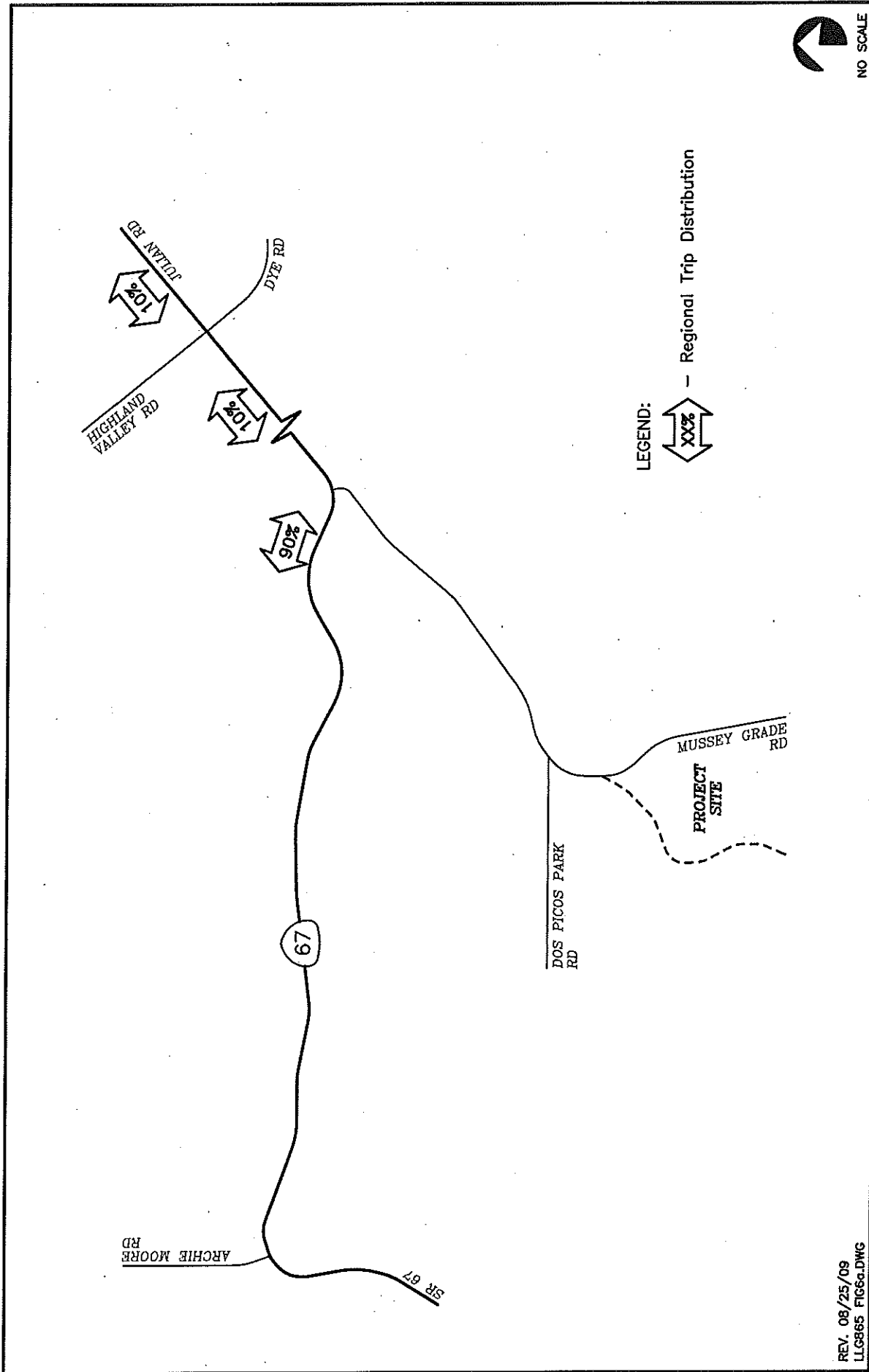
- a. Capacities based on County of San Diego Roadway Classification & LOS table for a two-lane CE roadway (See Appendix C).
- b. Average Daily Traffic
- c. Level of Service
- d.  $\Delta$  denotes a project-induced increase in ADTs.

**TABLE 4-4**  
**HCM TWO-LANE HIGHWAY ANALYSIS**

Two-Lane Highway Segment – SR 67	Existing		Existing + Project			Existing + Project + Cumulative		
	Volume	LOS <sup>a</sup>	Volume	$\Delta$ <sup>b</sup>	Sig? <sup>c</sup>	Volume	$\Delta$	Sig?
Archie Moore Road to Mussey Grade Road	24,500	F	24,712	212	No	35,172	10,672	Yes

**Footnotes:**

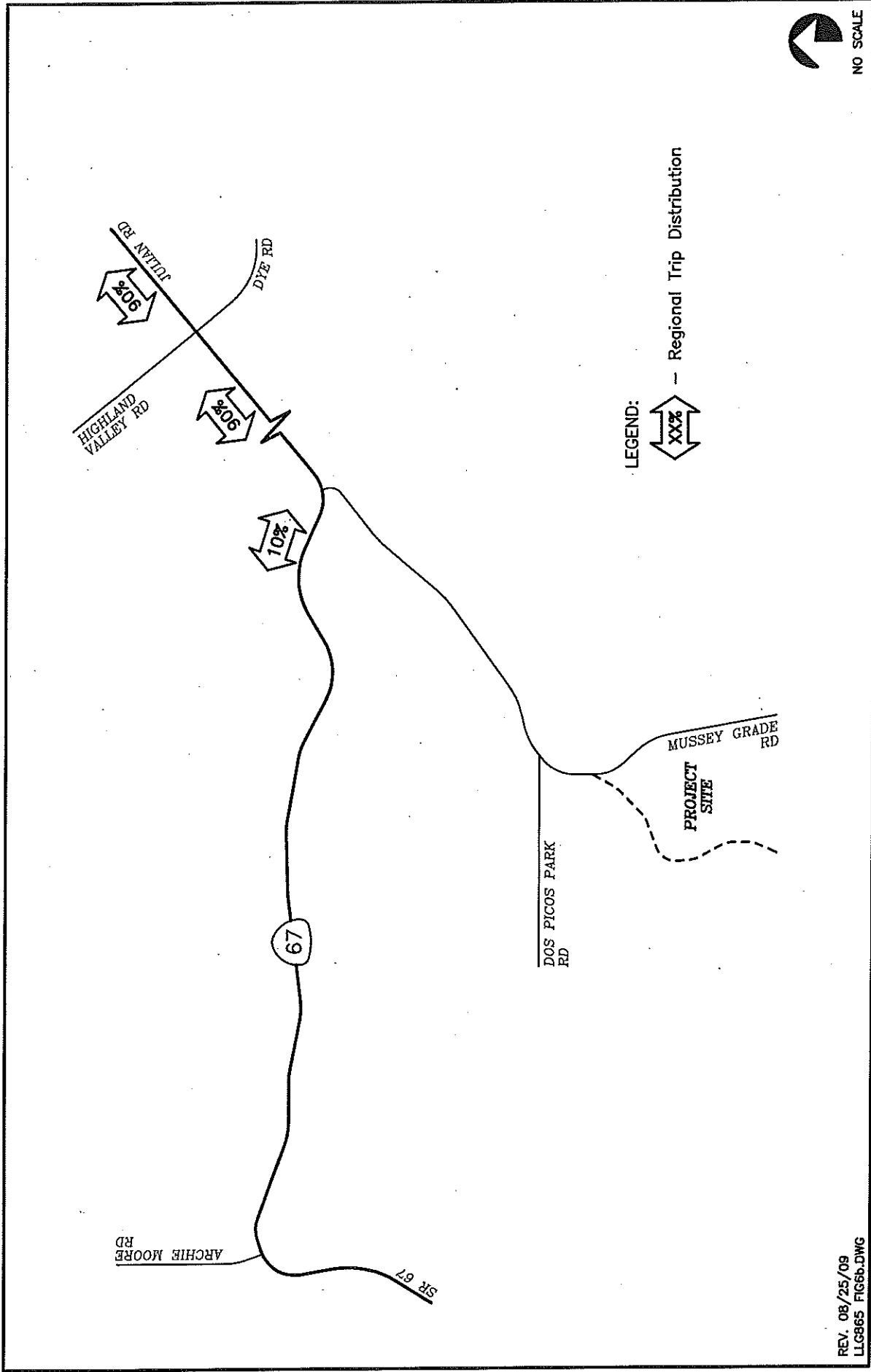
- a. Level of Service. County threshold for LOS F for two lane highway segment with signalized intersection spacing > 1 mile = 22,900 ADT.
- b.  $\Delta$  = Increase in project or cumulative projects' ADT
- c. Sig = direct or cumulative significant impact. County thresholds allow for 225 ADT before impact is calculated.



**Figure 6a**

**"GROUP" TRAFFIC DISTRIBUTION**

**SIERRA DEL MAR**



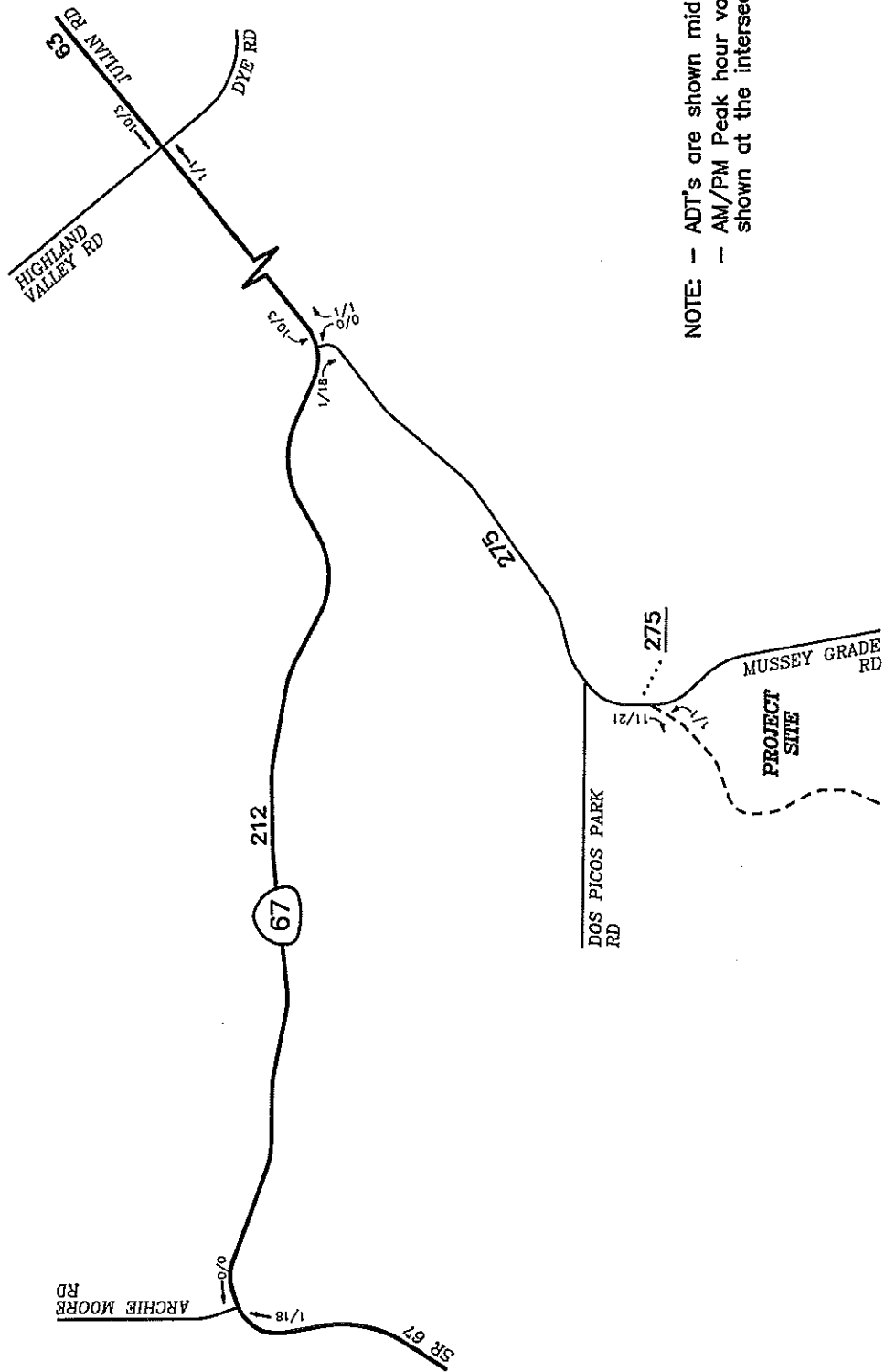
# Figure 6b

STAFF/MISCELLANEOUS TRAFFIC DISTRIBUTION

SIERRA DEL MAR

REV. 08/25/09  
LLG865 FIG6b.DWG

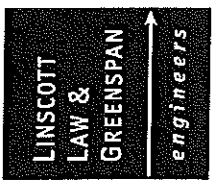
**LINSCOTT  
LAW &  
GREENSPAN**  
engineers



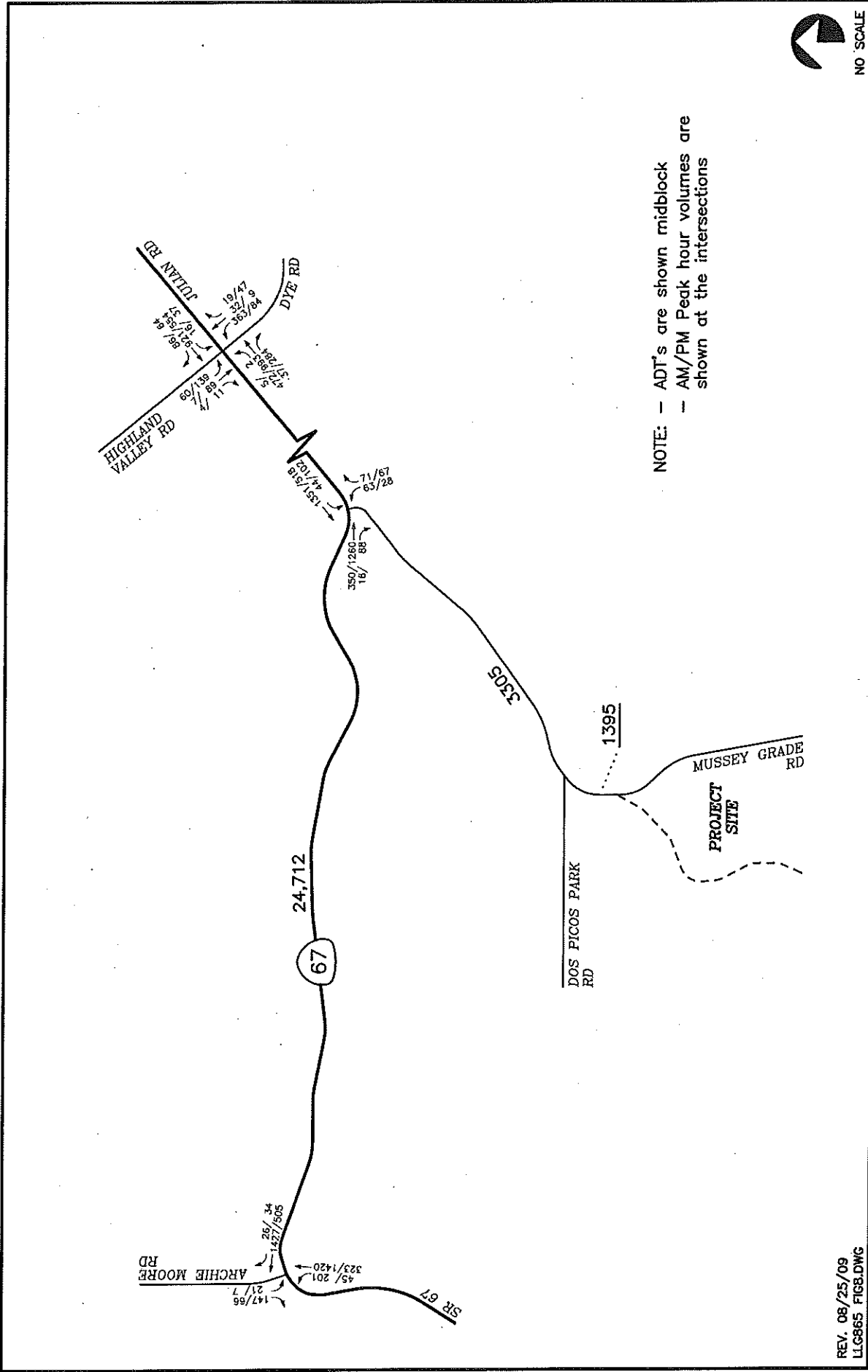
NOTE: -- ADT's are shown midblock  
 -- AM/PM Peak hour volumes are shown at the intersections



REV. 11/6/08  
 LLG865 FIG7.DWG



**Figure 7**  
**PROJECT TRAFFIC VOLUMES**  
**AM/PM PEAK HOURS & ADTS**  
**SIERRA DEL MAR**



**Figure 8**

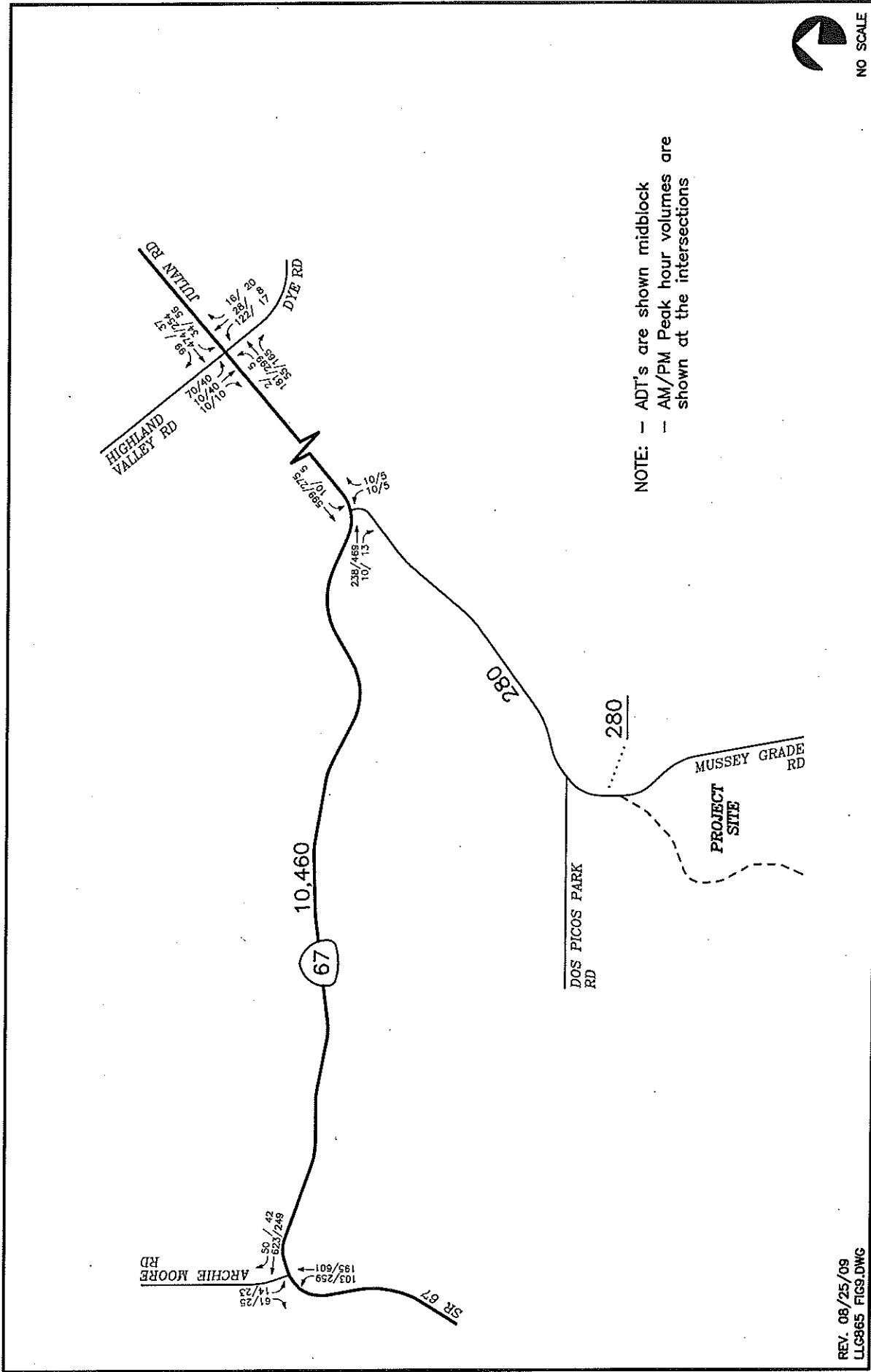
**EXISTING + PROJECT TRAFFIC VOLUMES  
AM/PM PEAK HOURS & ADTs**

**SIERRA DEL MAR**

REV. 08/25/09  
 LIC865 FIG8.DWG

**LINSCOTT  
 LAW &  
 GREENSPAN**  
 engineers

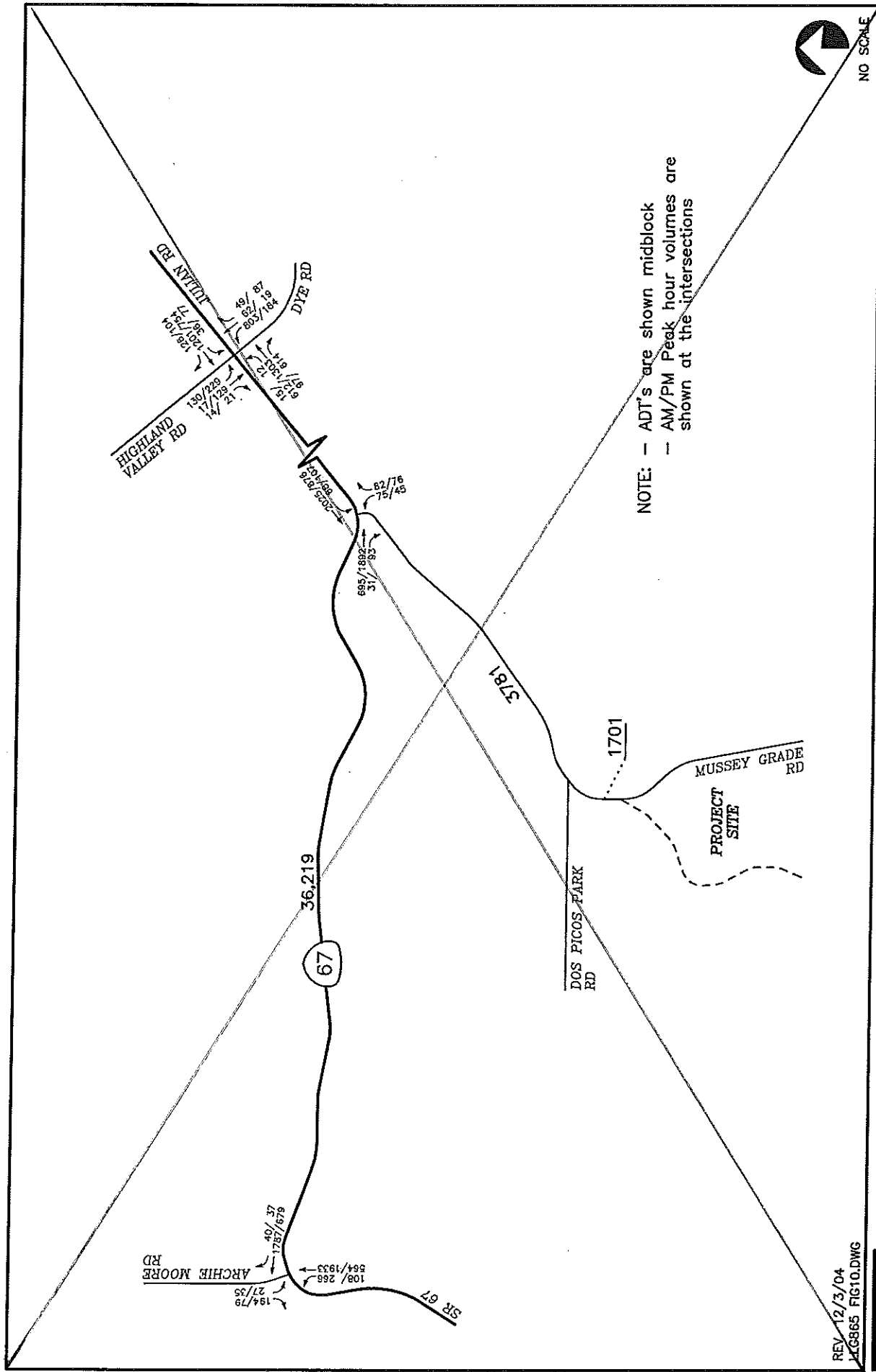




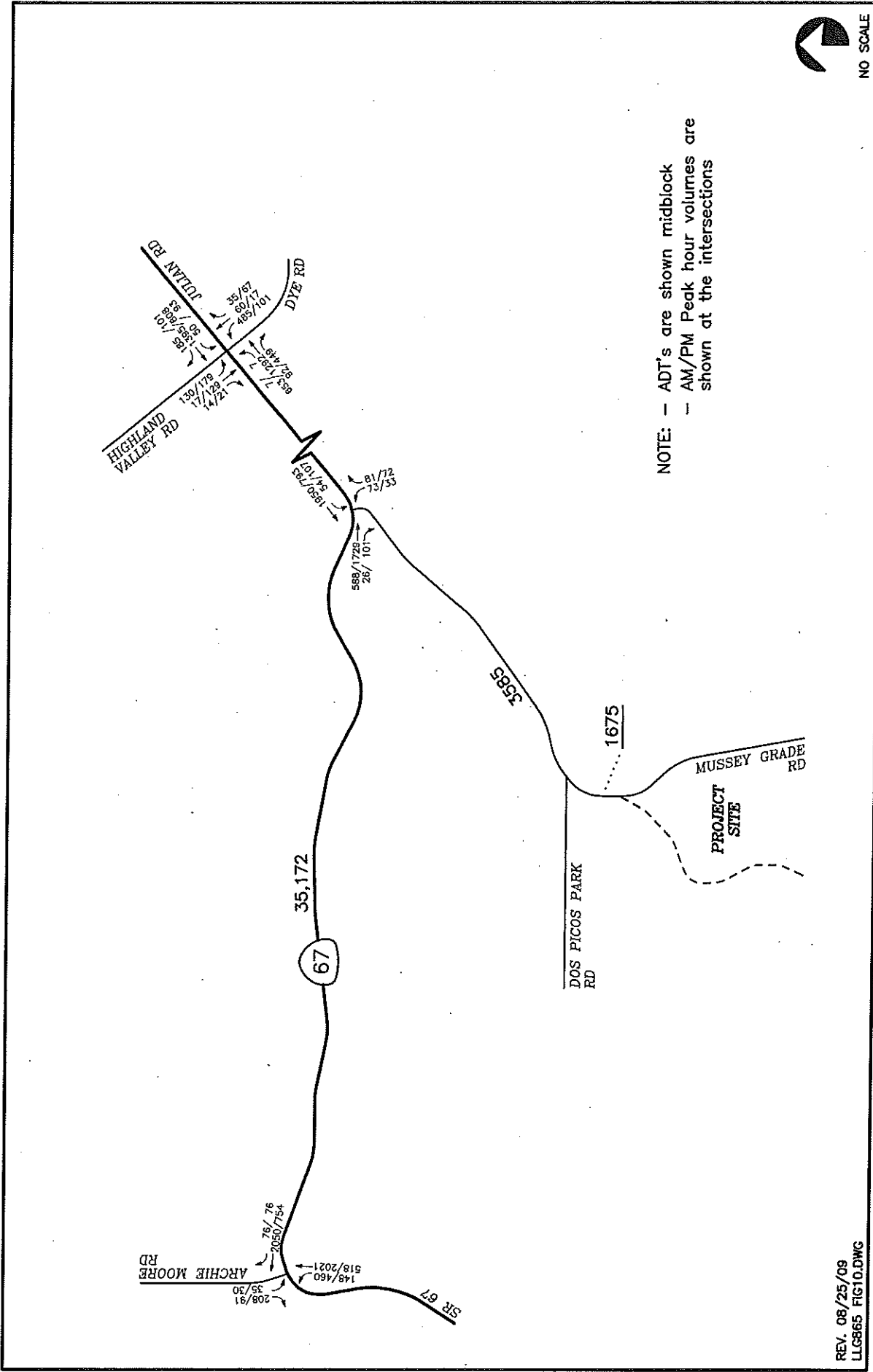
**Figure 9**

**NEAR-TERM CUMULATIVE TRAFFIC VOLUMES  
 AM/PM PEAK HOURS & ADTs**

**SIERRA DEL MAR**







**Figure 10**

**EXISTING + PROJECT + CUMULATIVE PROJECTS TRAFFIC VOLUMES  
AM/PM PEAK HOURS & ADTs**

SIERRA DEL MAR

## **7.0 SPECIAL EVENT TRAFFIC**

The traffic analysis assumes that the maximum number of users (748) is at the site. The trip generation, intersection analysis and street segment analysis is based on this worst case assumption. In addition, the significance of impacts was determined based on this assumption. Special events are expected to have less than 748 people on site. The exact number of attendees will vary widely depending on the type of event. However, since the special events cannot exceed 748 maximum occupancy, this traffic analysis "covers" special events.

## **8.05.0 PROJECT ACCESS, ON-SITE CIRCULATION & PARKING**

The following discussion addresses the forecasted parking demand for the Retreat Center component of the project, as well as the "worst case" Special Event forecasted parking demand.

### **5.1 Project Access**

Regional access to the site is via Mussey Grade Road to SR 67. Mussey Grade Road is a Non-Circulation Element (CE) public road. Two-lane CE road capacity criteria has been used for the purpose of roadway segment LOS assessment, but Mussey Grade Road functions similar to a Non-CE Residential Collector which can accommodate local traffic volumes up to 4,500 ADT with stable flow. As stated in the Public Road Standards, Levels of Service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic.

Traffic volumes (including project and cumulative project traffic) on Mussey Grade Road do not exceed 3,600 ADT, which is within the 4,500 ADT threshold described above. The assessment using two-lane CE capacity also shows LOS B operations under all conditions. No direct or cumulative project impacts to Mussey Grade Road are calculated.

The site access is currently a gated, private graded dirt road to Mussey Grade Road. Once on-site, a main dirt road provides access to the various portions of the camp.

### **5.2 On-Site Circulation**

The interior circulation concept for the Salvation Army Specific Plan consists of a network of meandering, county-style roads. Primary ingress/egress to the site would remain from the existing entry and main dirt access road off of Mussey Grade Road. All internal roads will be paved with asphaltic concrete with varying widths from a minimum of 18 feet to 24 feet, pursuant to letters from the Ramona Fire Department/CDF and the Department of Public Works regarding the project's submitted "Request for Exception to Private Road Standards".

A new road is envisioned to spur off the existing main road, towards the new hub of the camp, and would replace the existing access roads to the cabins as well as a portion of the main road that currently extends to the existing Ranch House. Several secondary access road branches would branch off of the main access road, providing access to specific areas of the site.

The roadway locations and sizes are designed to facilitate the efficient movement of motor vehicles throughout the site, including emergency vehicles. Some existing roads on-site will be paved to between 18 and 21-feet-wide within the existing roadbed due to environmental constraints. Emergency access would continue to be provided by the main access road, as well as a secondary emergency access road located south of the property, that parallels the Wildwood Ranch northern property boundary.

The on-site circulation is expected to operate well.

The sight distance of the project entrance/Mussey Grade Road intersection is adequate based on an analysis by the Civil Engineer contained in *Appendix D*. The sight distance evaluation was updated in October 2009.

### **5.3 Parking**

#### **8.4.15.3.1 Retreat Center**

The Retreat Center component of the project consists of a group of 175 people. This calculates to 75 parking spaces using the Vehicle Occupancy Ratio described in the report (40% vanpool, 40% carpool and 20% single-occupant). The derivation of these percentages is outlined earlier in this report. Thirty-five (35) additional parking spaces would be needed for staff and "miscellaneous" parkers. Therefore, a total of 105 parking spaces are estimated to be required. Obviously, if a large percentage of the group drove alone, a greater amount of parking would be needed.

#### **8.4.25.3.2 Special Event**

The client has estimated that a maximum of 748 guests could use the site at once for special events. Assuming the same Vehicle Occupancy Ratios as utilized in the report, about 320 parking spaces would be required.

#### **8.4.35.3.3 Total Area**

The total parking spaces required for the retreat center is 105 spaces, even if the retreat and summer camp are run concurrently, since the campers are dropped off at the site and their vehicles do not park. A special event with a maximum of 748 guests is calculated to require a total of 320 spaces. Approximately 300 parking spaces (188 designated; 112 overflow spaces) would be provided on the site with the proposed project. Since the overflow parking will be provided as open fields, and spaces were calculated using acreage required for parking lots, i.e. including lanes, etc., the shortfall of 20 spaces could be accommodated in the existing parking area with a valet-type arrangement that maximized the parking yield from the designated area of approximately 2.05 acres. Parking impacts would be less than significant.

The traffic analysis assumes that the maximum number of users (748) is at the site. The trip generation, intersection analysis and street segment analysis is based on this worst-case assumption. In addition, the significance of impacts was determined based on this assumption. Special events are expected to have less than 748 people on-site. The exact number of attendees will vary widely depending on the type of event. However, since the special events cannot exceed 748 maximum occupancy, this traffic analysis "covers" special events.

## **6.0 SPECIAL EVENT TRAFFIC**

The traffic analysis assumes that the maximum number of users (748) is at the site. The trip generation, intersection analysis and street segment analysis is based on this worst-case assumption. In addition, the significance of impacts was determined based on this assumption. The site may hold special events up to the maximum 748 users assumed in this traffic study, although the applicant expects most special events to have less than 748 people on-site. Special events would be held on weekend days, be restricted to not occur during weekday commuter periods, and be subject to the County of San Diego Department of Land Use's published Guidelines for Temporary Uses on Parcels Governed by a Major Use Permit.

## **7.0 IMPACTS SUMMARY**

### **7.1 Summary of Impacts / Mitigation Measures**

The following is a description of the calculated significant impacts for the proposed project based on the established Significance Criteria along with recommendations for mitigation measures at the impacted locations.

### **7.2 Significance of Impacts**

#### **7.2.1 Direct Impacts**

The Salvation Army – Sierra Del Mar project adds trips to the existing roadway network, but does not exceed the County of San Diego thresholds for direct impacts. No direct impacts area calculated.

#### **7.2.2 Cumulative Impacts**

The project adds traffic to the following cumulatively impacted locations:

- a. SR 67/ Archie Moore Road unsignalized intersection
- b. SR 67/ Mussey Grade Road unsignalized intersection
- c. SR 67/ Dye Road signalized intersection
- d. SR 67 Two-Lane Highway segment: between Archie Moore Road and Mussey Grade Road

### **7.3 Mitigation Measures**

- a. - d. – Participate in the County of San Diego’s Transportation Impact Fee (TIF) Program through fee contributions.

## **8.0 SUMMARY OF RECOMMENDED PROJECT DESIGN FEATURES, IMPACTS AND MITIGATION**

Based on the County of San Diego significance criteria, the project would result in significant cumulative impacts to the local roadways and intersections within the Ramona community and regional roadway facilities. Based on the calculated cumulative impacts, the following mitigation measures are recommended:

- Pay the appropriate County Traffic Impact Fee to mitigate cumulative impacts to below a level of significance.

Table 8-1 summarizes the recommended mitigation measures and improvements.

**TABLE 8-1**  
**IMPACT/MITIGATION MEASURE SUMMARY**

<u>Location:</u>	<u>Impact Type</u>	<u>Mitigation Measure</u>
• <u>SR 67 / Archie Moore Road Unsignalized Intersection</u>	<u>Cumulative</u>	<u>Pay the appropriate TIF.</u>
• <u>SR 67 / Mussey Grade Road Unsignalized Intersection</u>	<u>Cumulative</u>	<u>Pay the appropriate TIF.</u>
• <u>SR 67 / Dye Road Signalized Intersection</u>	<u>Cumulative</u>	<u>Pay the appropriate TIF.</u>
• <u>SR 67 Two-Lane Highway Segment: Archie Moore Road to Mussey Grade Road</u>	<u>Cumulative</u>	<u>Pay the appropriate TIF.</u>

## 9.0 ~~ON-SITE CIRCULATION/ACCESS~~

~~Regional access to the site is via Mussey Grade Road to SR 67. The site access is currently a gated, private graded dirt road to Mussey Grade Road. Once on-site, a main dirt road provides access to the various portions of the camp.~~

~~The interior circulation concept for the Salvation Army Specific Plan consists of a network of meandering, county style roads. Primary ingress/egress to the site would remain from the existing entry and main dirt access road off of Mussey Grade Road. Portions of the access road would be improved to a 24 foot wide paved asphalt access road designed in accordance with County fire standards. A new road is envisioned to spur off the existing main road, towards the new hub of the camp, and would replace the existing access roads to the cabins as well as a portion of the main road that currently extends to the existing Ranch House. Several secondary access road branches would branch off of the main access road, providing access to specific areas of the site. The roadway locations and sizes are designed to facilitate the efficient movement of motor vehicles throughout the site, including emergency vehicles.~~

~~Emergency access would continue to be provided by the main access road, as well as a secondary emergency access road located south of the property, that parallels the Wildwood Ranch northern property boundary.~~

~~The on-site circulation is expected to operate well.~~

~~The sight distance of the project entrance/Mussey Grade Road intersection is adequate based on an analysis by the Civil Engineer contained in *Appendix H*.~~



## 10.0 SIGNIFICANCE OF IMPACTS/MITIGATION MEASURES

Two types of significant impacts can be calculated; direct project impacts and cumulative project impacts.

### DIRECT IMPACTS

No ~~direct significant impacts~~ are calculated at the key intersections since the peak hour project contribution to the critical approaches (shown on *Figure 7*) do not exceed the allowable increases for unsignalized intersections shown on *Table 3* and the delay increase at the SR 67/Dye Road intersection does not exceed County thresholds. The project contribution to reduction in speed on the SR 67 Two-Lane Highway segment is calculated to be 0.1 mph, a decrease that would not be noticeable to the average driver, and would therefore not be considered to "significantly impact congestion" and therefore constitute a direct impact, as described in the County Public Facilities Element Criteria discussed in Section 6.0. In addition, the "percent time following" increase is only 0.1 and the queue increase is a maximum of 2 vehicles.

In addition, project traffic would occur on weekend days and during a very short period on Mondays and Fridays, not consistently during the weekdays. Also, the "On Season"/"Off Season" nature of the project indicates that the trip generation patterns during the year vary, with the highest use occurring only during the three summer months. The "Youth Camp" portion of the project is mainly a weekend activity that occurs in the summertime. Campers are typically shuttled to the camp via passenger vans and busses that accommodate a minimum of fifteen campers each, which reduces the overall number of trips to/from the site. There are many days when the youth camp generates virtually zero trips since the guests will already be there. Another function at the project site, the retreat center, generates very little peak hour traffic other than on days when guests arrive and leave. There will be many days of the year when the retreat center will generate virtually zero trips since the guests will already be there.

### CUMULATIVE IMPACTS

Based on the County Significance Criteria, and *Figure 7* of the traffic study (which shows the project traffic contribution amount to the critical street segments and intersection movements), the project is calculated to contribute to *significant cumulative impacts* at the following locations:

#### Intersections:

1. SR 67/ Archie Moore Road unsignalized intersection
2. SR 67/ Mussey Grade Road unsignalized intersection
3. SR 67/ Dye Road/ Highland Valley Road signalized intersection

## ~~Two-Lane Highway Segments:~~

### ~~1. SR 67 from Archie Moore Road to Mussey Grade Road~~

~~The following measures are recommended to mitigate the significant cumulative impacts to below a level of significance:~~

## ~~Intersections:~~

### ~~1. Construct the following improvements to the SR 67/ Dye Road/ Highland Valley Road intersection:~~

- ~~i. Provide a second westbound to southbound left turn lane from Dye Road to SR 67, and;~~
- ~~ii. Lengthen the existing northbound to eastbound right turn pocket from SR 67 to Dye Road to provide a 500-foot long pocket.~~

~~The County is currently considering a Traffic Impact Fee (TIF) program. The TIF program includes two components, the financing mechanism (i.e., the fee) and an approval of and a commitment to construct certain road improvements. If the County adopts both components of the TIF program and the TIF program includes the road improvements necessary to mitigate the project's contribution to the cumulative impacts, payment of the TIF will mitigate the project's contribution to the cumulative traffic impacts. Improvements to the SR 67/Dye Road/Highland Valley Road intersection will reduce delay and improve flow at this intersection, which will in turn reduce demand for traffic to turn from Archie Moore Road onto SR 67. This will occur because drivers currently use Archie Moore Road due to long delays at the Dye Road intersection. If the Dye Road intersection is improved, fewer drivers will use the Archie Moore Road intersection and delays will therefore improve. The resultant reduction in volume (approximately 10% of peak hour observed turning volumes) to/from Archie Moore Road will mitigate the project's cumulative contribution to this location by improving delay at the intersection.~~

### ~~2. Construct the following improvements to the SR 67/ Mussey Grade Road intersection:~~

- ~~i. Extend the southbound acceleration lane on SR 67 departing the Mussey Grade Road intersection by 100-feet;~~
- ~~ii. Widen the intersection approach of Mussey Grade Road at SR 67 to allow for a dedicated right turn lane to SR 67 northbound, and;~~
- ~~iii. Widen northbound SR 67 departing the Mussey Grade Road intersection to match the planned extension of northbound to eastbound right turn pocket at Dye Road, as described above.~~

~~The County is currently considering a Traffic Impact Fee (TIF) program. The TIF program includes two components, the financing mechanism (i.e., the fee) and an approval of and a commitment to construct certain road improvements. If the County adopts both components of the TIF program and the TIF program includes the road improvements necessary to mitigate the project's contribution to the cumulative impacts, payment of the TIF will mitigate the project's contribution to the cumulative traffic impacts. The acceleration lane serves as a refuge lane, allowing outbound left-turning vehicles (the "critical movement") from Mussey Grade Road to cross only one direction of traffic on SR 67 at a time. By extending the acceleration/ refuge lane, more storage capacity is created, thereby improving operations at this location by increasing the number of left-turning vehicles per hour.~~

~~The above mitigation would result in the widening of northbound SR 67 to two lanes between Mussey Grade Road and Dye Road/ Highland Valley Road, generally adding an additional lane of capacity. The resultant increase in vehicles/hour that can be accommodated by these intersection improvements to Mussey Grade Road will mitigate the project's cumulative contribution to this location by improving intersection operations to LOS D during both peak hours in the existing + project scenario.~~

- ~~3. Construct the following improvements to the SR 67/ Dye Road/ Highland Valley Road intersection:~~
- ~~i. Provide a second westbound to southbound left-turn lane from Dye Road to SR 67, and;~~
  - ~~ii. Lengthen the existing northbound to eastbound right-turn pocket from SR 67 to Dye Road to provide a 500-foot long pocket.~~

~~The County is currently considering a Traffic Impact Fee (TIF) program. The TIF program includes two components, the financing mechanism (i.e., the fee) and an approval of and a commitment to construct certain road improvements. If the County adopts both components of the TIF program and the TIF program includes the road improvements necessary to mitigate the project's contribution to the cumulative impacts, payment of the TIF will mitigate the project's contribution to the cumulative traffic impacts.~~

~~These improvements would add additional capacity to the SR 67/Highland Valley Road/Dye Road intersection, resulting in significant delay decreases at the intersection. Appendix I shows the "with mitigation" delays and level of service. The AM peak hour delay is 54.2 seconds and the PM peak hour delay is 113.5 seconds. The delay reductions are 175.3 seconds and 19.1 seconds during the AM and PM peak hours, respectively. The delay reduction due to the mitigation measures greatly exceeds the project's delay contribution to significant cumulative impacts (1.2 seconds in the AM and 0.0 seconds in the PM).~~

~~Two Lane Highway Segments:~~

1. ~~Construct the following improvements to the SR 67/ Dye Road/ Highland Valley Road intersection:~~

- ~~i. Provide a second westbound to southbound left turn lane from Dye Road to SR 67, and;~~
- ~~ii. Lengthen the existing northbound to eastbound right turn pocket from SR 67 to Dye Road to provide a 500 foot long pocket.~~

~~The County is currently considering a Traffic Impact Fee (TIF) program. The TIF program includes two components, the financing mechanism (i.e., the fee) and an approval of and a commitment to construct certain road improvements. If the County adopts both components of the TIF program and the TIF program includes the road improvements necessary to mitigate the project's contribution to the cumulative impacts, payment of the TIF will mitigate the project's contribution to the cumulative traffic impacts. Improvements to the SR 67/ Dye Road intersection as well as to the Mussey Grade Road intersection will reduce delay and improve flow along the SR 67 corridor. This will in turn result in less delay at the intersections with more "green time" at the signalized locations, producing higher speeds along the two lane highway segment. The resultant increase in speed will mitigate the project's cumulative contribution to this location.~~

## 11.0 ~~RECOMMENDED TRAFFIC REDUCTION MEASURES~~

~~The trip generation calculations for this study rely on assumptions made about the type of carpooling/vanpooling that is associated with the project. In order for this analysis and its findings to remain valid, these assumptions need to be practiced by the project. This could be accomplished by means such as a shuttle service for retreat groups, or reduced entry fees for carpool/vanpool users. It is therefore recommended that the permit be conditioned to require both the camp and the retreat center uses to implement carpool/vanpool policies to achieve VORs similar to those assumed in this study.~~

~~The findings of the study also rely on the project not exceeding the assumed 748 users/ day. Factors limiting the user capacity of the project site could include lodging accommodations, capacity of the retreat center, and/ or number of campsites.~~

## ~~12.0 SUMMARY AND CONCLUSIONS~~

~~The proposed project is calculated to generate 275 ADT with 11 inbound/1 outbound trips during the AM peak hour and 21 inbound/1 outbound trips during the PM peak hour during the week. This small amount of traffic is calculated to have significant cumulative impacts on the adjacent street system, based on County significance criteria. Mitigation measures were recommended in the previous section. In addition, the following project features have been incorporated into the project in order to reduce impacts to the surrounding environment and shall be conditions of the project Major Use Permit:~~

- ~~▪ Youth campers, who comprise the majority of camp users, shall continue to be transported to and from the camp via bus or vanpool.~~
- ~~▪ The Retreat Center rental contract shall recommend that bus, van or carpool be the mode of transportation.~~

## **9.0 REFERENCES**

Highway Capacity Manual (HCM) 2000

SANDAG (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002.

Guidelines for Determining Significance, adopted September 26, 2006 and revised effective June 30, 2009.

County's General Plan Public Facilities Element (PFE) Transportation, Policy 1.1

County of San Diego Report Format & Content Requirements for Transportation and Traffic, revised June 30, 2009.

County of San Diego Circulation Element

County of San Diego Transportation Impact Fee, TIF Program Update January 2008

## **10.0 LIST OF PREPARERS AND ORGANIZATIONS CONTACTED**

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True Count (traffic data provider), Mr. Gustavo Garcia



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